

GEORGE WASHINGTON MEMORIAL PARKWAY
(Mount Vernon Memorial Highway)
(Clara Barton Parkway)
Mount Vernon Vicinity
Fairfax County
Virginia

HAER No. VA-69

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Department of the Interior
1849 C Street, NW, NC300
Washington, DC 20240

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- Location:** George Washington Memorial Parkway (GWMP) is composed of three linked segments flanking the Potomac River in Virginia, Maryland, and the District of Columbia. The original portion was initially designated the Mount Vernon Memorial Highway (MVMH). It extends 15.2 miles from Arlington Memorial Bridge south to the gates of Mount Vernon. The northern portion extends 9.7 miles along the Virginia side of the Potomac from Arlington Memorial Bridge to the Capital Beltway (Interstate 495), and for 6.6 miles along the Maryland shore from Chain Bridge to MacArthur Boulevard. The Maryland road segment was renamed Clara Barton Parkway in November 1989, but remains administratively part of GWMP. As of 1994 the combined segments contained 38.3 miles of paved roadway and totaled 7,749.64 acres.
- Designers:** Mount Vernon Memorial Highway was designed and built by the U.S. Bureau of Public Roads (BPR). The BPR's R. E. Toms was the principal highway engineer. Gilmore Clarke and Jay Downer served as design consultants throughout the project. BPR District Engineer J. W. Johnson was in charge of general construction, with BPR landscape architect Wilbur Simonson supervising development of the parkway landscape and BPR engineer J.V. McNary overseeing construction of bridges, overpasses, and other engineered features. Frederick Law Olmsted, Jr. and Charles W. Eliot II played leading roles in articulating the basic George Washington Memorial Parkway concept of parkways flanking both sides of the Potomac between Mount Vernon and Great Falls. The post-World War II sections were designed and built by the BPR and its successor, the Public Roads Administration, in cooperation with National Park Service staff architects and landscape architects.
- Construction Dates:** Mount Vernon Memorial Highway was authorized by Congress in 1928 and constructed between 1929-1932. The northern portions of GWMP were authorized in 1930 and largely completed between 1935-1965. The final section of roadway between the District of Columbia end of Chain Bridge and the Maryland line was completed in 1970.
- Present Use:** GWMP's primary use is as a scenic motor parkway restricted to non-commercial vehicles. It provides access to Mount Vernon and serves as a commuter artery for the Washington metropolitan area. The parkway's boundaries contain many civic and military memorials, two wildlife

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 2)

refuges, three marinas, several hiking and biking trails, and historic sites such as Jones Point Lighthouse and Arlington House.

Significance:

GWMP is a landmark in the history of American landscape design, highway construction, and regional planning. The parkway serves as a memorial to the first president and provides an attractive approach to his home at Mount Vernon, one of the nation's most popular historic sites. The original MVMH section was the first comprehensively designed modern motorway built by the federal government. It strongly influenced parkway and highway construction throughout the United States. In addition to providing an indispensable link in the regional transportation system, GWMP preserves invaluable historic, recreational and natural resources along the Potomac River. MVMH is also the most prominent reminder of the 1932 celebration of the bicentennial of Washington's birth. The Mount Vernon Memorial Highway segment is listed in the National Register of Historic Places and the Virginia Landmarks Register.

Project Information

Documentation of George Washington Memorial Parkway was undertaken by the Historic American Buildings Survey/ Historic American Engineering Record (HABS/HAER), a division of the National Park Service, E. Blaine Cliver, Chief. The project was cosponsored by the National Park Service Roads and Bridges Program, Mark Hartsoe, Manager. Project supervisor was Sara Amy Leach, HABS Historian. Large-format photographs were produced by HABS photographer Jack Boucher and HAER photographer Jet Lowe. Postscript of later developments added by Timothy Davis in January 1998.

The summer 1993 documentation team consisted of architect technicians Gary McCloud (Catholic University) and Peter Ratcliffe (Catholic University). The summer 1994 team consisted of architects Robert Dawson (University of Arizona) and Michael Gala (Catholic University), and landscape architects Ed Lupyak (Pennsylvania State University) and Anna Maria Marconi-Betka (ICOMOS/Poland). The 1994 team leader was landscape architect Tim Mackey (Harvard University). The historic overview was written by Timothy Davis (University of Texas). Bridge reports were prepared by Michael Kucher (University of Delaware) and Jennifer Wentzien (University of Washington).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 3)

TABLE OF CONTENTS

Description	5
Associated Structures	6
Significance	7
Early History of the GWMP Corridor	14
Native American Settlement	14
GWMP in the Colonial Era	15
GWMP as a Transportation Corridor in the Nineteenth Century	18
Turnpikes	19
Canals	23
Railroads	27
Mount Vernon: "The American Mecca"	29
The Electric Railway Era	34
The Mount Vernon Avenue Association	40
Parkways	52
Parkway Precedents	52
The Machine Enters the Garden	55
Westchester County Parkway Principles	62
Mount Vernon Memorial Highway: Authorization	67
Mount Vernon Memorial Highway: Design Process	81
Getting Started	81
The Design Team	87
Special Design Concerns	90
A Model Modern Motorway	95
Mount Vernon Memorial Highway: Design and Construction Details	100
Riprap, Face Stone, and Hydraulic Fill	100
Grading, Alignment, and Basic Circulation Features	102
The Mount Vernon Terminus	105
The Great Cloverleaf Controversy	107
Bridges and Grade Separation Structures	109
Pavement	115

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 4)

Guard Rail	118
Lighting	119
Signs, Bus Stop Shelters, and Incidental Features	121
Monuments and Memorial Trees	122
Mount Vernon Terminus Concession Stand	123
Landscape, Planting, and Forestry	125
Mount Vernon Memorial Highway: Completion, Influence, Reception	134
Dedication	137
Reception, and Influence	138
George Washington Memorial Parkway	142
Background and Authorization	142
Promoting the Parkway	148
George Washington Memorial Parkway: Design and Development	151
George Washington Memorial Parkway: The End of the Road	161
GWMP in Fairfax County, Va.	162
GWMP in Maryland	166
Major Alterations 1930-1997	177
Major Alterations to Mount Vernon Memorial Highway	177
National Airport	178
Alterations to Roadways and Circulation Systems	179
General Landscape	182
The Evolving Memorial Landscape	183
Additional Recreational Features	186
Postscript: Alterations and Management Issues in the 1990s	187
Illustrations	193
Sources Consulted	340

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 5)

DESCRIPTION

George Washington Memorial Parkway (GWMP) stretches along the Potomac River between Great Falls Park and Mount Vernon. As of 1994, the parkway boundaries encompassed 7,749.64 acres of park land, historic sites, and paved roadways. On the Virginia side of the river it extends from the Capital Beltway (Interstate 495) to Mount Vernon and also includes Great Falls Park. On the Maryland side, the Clara Barton Parkway segment of GWMP extends from Chain Bridge to MacArthur Boulevard slightly upstream from the U.S. Navy's David Taylor research facility. Columbia Island is also part of GWMP. Since the shoreline of the Potomac River forms the Virginia state border, this island is officially within the District of Columbia. GWMP thus extends through the following political jurisdictions: Arlington County, Fairfax County, and Alexandria City, Virginia; Montgomery County, Maryland; and Washington, D.C. The road system is composed of three interconnected segments flanking the Potomac River in Virginia, Maryland, and the District of Columbia. The original Mount Vernon Memorial Highway section extends 15.2 miles from Arlington Memorial Bridge south to Mount Vernon. The northern portion stretches 9.7 miles along the Virginia side of the Potomac from Columbia Island to the Capital Beltway (Interstate 495), and for 6.6 miles along the Maryland shore from Chain Bridge to MacArthur Boulevard. The Maryland road segment was designated Clara Barton Parkway in November 1989. As of 1994 the combined segments totaled 38.3 miles of roadway and encompassed 7,749.64 acres.

GWMP traverses two principal physiographic regions: the coastal plain and the piedmont plateau. Between Washington and Mount Vernon, the parkway winds through the gently undulating coastal plain. The coastal plain region is characterized by soft sedimentary rocks and alluvial soils, primarily sand, clay, and gravel. This creates a gentle landscape of low, rounded hills, marshes, and broad estuaries. The roadway follows the shoreline for much of its length, passing through marshes, along low escarpments, and on top of several substantial sections of filled land. North of Washington, the parkway climbs abruptly to the piedmont plateau, skirting the Potomac Gorge and passing through rolling, heavily wooded terrain broken by the occasional steep ravines formed by creeks feeding into the Potomac River. The terrain in the northern end of the parkway is more dramatic, with rocky ledges and steep cliffs surrounded by large expanses of second growth forest.¹

The parkway's woodlands consist primarily of deciduous hardwoods characterized as Piedmont Upland Hardwood Forest and Coastal Plain Hardwood Forest. This region of northern Virginia has been settled since the mid-seventeenth century, and most of the original forest has long since disappeared. The second growth forests found throughout most of the parkway

¹ "1994 George Washington Memorial Parkway Resource Management Plan," (xerographic manuscript from GWMP Headquarters, NPS, U.S. Department of the Interior), 7, 9.

consist primarily of tulip, poplar, oak, pine, oak, hickory, and beech. The understory is composed of holly, dogwood, red bud, paw, and a variety of perennial and annual plants. The forested wetlands in coastal plain areas are characterized by black gum, oak, and cedar. As the second growth forest matures native conifers are being replaced by hardwoods. Exotic evergreens can be found along the parkway in areas that have been actively managed as designed landscapes. Park managers are trying to control invasive exotic species like kudzu and English ivy, which are found along the forest edge. In general, park managers have tried to minimize the presence of exotic species except in the more extensively developed areas between Columbia Island and Alexandria. The National Park Service maintains large expanses of open lawn in several areas of the parkway, and mows along the edges of the roadway, but there are no significant naturally occurring grasslands within the parkway. There are, however, a number of extensive wetlands. Some of these are naturally occurring and others are the result of extensive filling and changes in drainage caused by three centuries of agricultural and residential development.²

ASSOCIATED SITES AND STRUCTURES

In addition to the roadways and surrounding park land, GWMP includes Jones Point Park and Light House, Great Falls Park, Glen Echo Park, Dyke Marsh Wildlife Preserve, Roaches Run Wildlife Area, Fort Marcy, Fort Hunt, Turkey Run Park, Claude Moore Colonial Farm, Langley Fork Park, United States Marine Corps War Memorial (Iwo Jima), Netherlands Carillon, Lyndon B. Johnson Memorial Grove and Lady Bird Johnson Park, along with a number of smaller memorials and structures.

While GWMP serves many functions, this report is primarily concerned with the parkway's evolution as a transportation corridor and scenic and commemorative landscape. The following historical overview concentrates on the development of the parkway's designed landscapes, memorials, roads, and road-related structures. Detailed information on individual bridges can be found in the associated HAER bridge reports. This study focuses on the origins of the memorial parkway concept and the development of the original Mount Vernon Memorial Highway component through 1932. The emphasis on the parkway's origins and initial development is designed to complement Barry Mackintosh's forthcoming administrative history of George Washington Memorial Parkway, which provides a superlative account of the evolution of the broader George Washington Memorial Parkway project from 1930 onward.³ Information on specific memorials and historic sites administered by the parkway can be found in the National Park Service's "1994 George Washington Memorial Parkway Management

² "1994 George Washington Memorial Parkway Resource Management Plan," 10.

³ Barry Mackintosh, "George Washington Memorial Parkway: Administrative History" forthcoming from History Division, National Park Service, Washington, D.C.

Plan," and in National Register of Historic Places nomination forms and other management planning and historic preservation documents. No attempt is made here to provide comprehensive histories of major associated features such as Arlington House, Clara Barton House, Jones Point Lighthouse, Glen Echo Amusement Park, Arlington Memorial Bridge, the two presidential memorials, the Chesapeake and Ohio Canal, and Great Falls Park.

SIGNIFICANCE

The George Washington Memorial Parkway (GWMP) is a landmark in the history of American parkway design, highway construction, regional planning, and natural resource protection. The parkway's initial section, originally known as the Mount Vernon Memorial Highway (MVMH), was the first comprehensively designed modern motorway built by the federal government. Its sophisticated design, together with its status as one of the most prominent features of the nationwide efforts to commemorate the bicentennial of Washington's birth, gave the MVMH tremendous exposure in the popular and professional press. By introducing design and construction techniques developed in the pioneering motor parkways of Westchester County, New York, to federal practice, it influenced parkway and highway construction throughout the United States. The legislation and interagency cooperation required to complete the GWMP likewise served as a model for inter-jurisdictional regional planning. In addition to providing an indispensable link in the regional transportation system, GWMP preserves invaluable historic, recreational, and natural resources along the Potomac River.

A Memorial to George Washington

The George Washington Memorial Parkway was conceived and constructed as a monument to the nation's first president. This commemorative function strongly influenced the parkway's location and design, and helped to facilitate its authorization, funding, and construction. The numerous memorial plantings, tablets, and monuments that dot the parkway landscape give the GWMP a unique character that distinguishes it from other roads and parkways in the National Park system.

The campaign to construct an impressive boulevard linking the nation's capital with Mount Vernon coincided with the renewed interest in Washington that followed the Philadelphia Centennial Exposition of 1876 and culminated in the 1932 celebration of the bicentennial of Washington's birth.⁴ Initial proposals for the parkway presented it more as a patriotic pilgrimage route than as a recreational drive or suburban park. Most previous parkway

⁴ While Washington was always highly revered, and Mount Vernon was already a tourist destination during his lifetime, cultural historian Karal Ann Marling credits the Philadelphia Centennial with raising Washington worship to even greater levels (Karal Ann Marling, George Washington Slept Here: Colonial Revivals and American Culture, 1876-1986 (Cambridge: Harvard University Press, 1988).

projects at the state and local level were promoted as recreational outlets, public health improvements, and/or civic beautification projects. While early advocates for a roadway between Washington and Mount Vernon cited these tangible benefits, their proposals emphasized the proposed boulevard's commemorative and didactic functions.

The Mount Vernon Avenue Association, founded in 1888 to promote the boulevard project, stressed the project's associations with Washington and other historic figures. In addition to calling attention to a wide variety of historic sites along the proposed avenue, early plans envisioned the construction of an "American Westminster Abbey or Appian Way": a broad avenue lined with an ever-growing assemblage of monuments to American statesmen, patriots, and military leaders.⁵ The trip to Mount Vernon along this avenue would ostensibly provide lessons in patriotism, military valor, and civic virtue, theoretically elevating the traveler into a more informed and patriotic American. During the 1920s and 1930s, the Bureau of Public Roads and the National Capital Park and Planning Commission emphasized the parkway's landscape design and innovative traffic features, but the memorial function continued to influence the physical form of the parkway and the public perception of the highway's function. The final route of Mount Vernon Memorial Highway incorporated several historic sites between Washington and Mount Vernon. The original signage and associated structures called attention to historic features and displayed conspicuous colonial motifs. Patriotic associations placed numerous memorial trees and tablets along the roadside. Almost every article that greeted the Mount Vernon Memorial Highway's completion commented extensively on its historic associations and memorial character.

The master plan for extending the George Washington Memorial Parkway along both sides of the Potomac, while motivated primarily by what would now be called environmental concerns, also called attention to historic features within the proposed reservation. This was particularly true for sites where Washington's name could be invoked. The proposed northern terminus was at Great Falls, where the first president had promoted an innovative canal project. The proposed southern terminus on the Maryland side was located at Fort Washington, across the river from Mount Vernon. While these plans were eventually scaled back, the northern sections of the parkway helped to preserve the remnants of Washington's Patowmack Canal, along with its successor, the Chesapeake and Ohio Canal. The expanded parkway also included the Glen Echo Amusement Park and the remains of several Civil War forts.

The memorial parkway concept continues to shape the GWMP's landscape and to differentiate it from other parkways in the federal system. While several later parkways have been given commemorative titles, this designation has usually been a matter of nomenclature, and rarely

⁵ John Reavis, Mt. Vernon Avenue: A National Memorial Highway from Washington to Mt. Vernon (Washington, D.C.: Mt. Vernon Avenue Association, 1888); A.J. Wedderburn, Mt. Vernon Avenue (Washington, D.C.: The Art Publishing Company, 1913).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 9)

has had a significant effect on the parkway's design or use. The GWMP's landscape is distinguished by the numerous monuments and memorials that have been added over the years to commemorate not only Washington, but the patriotic contributions of various other individuals and groups. The initial MVMH section contains a wide variety of memorials ranging from trees and tablets placed at the time of the parkway's construction, to the 1934 Navy-Marine Memorial, the military monuments lining the approach to Arlington National Cemetery, and the Lyndon Baines Johnson Memorial Grove on Columbia Island. Memorials within the later sections of the GWMP include such varied sites as the U.S. Marine Corps War Memorial (better known as Iwo Jima), the Netherlands Carillon, and the Theodore Roosevelt Memorial. The 1989 rededication of the Maryland road segment of GWMP as the Clara Barton Parkway, together with recent efforts to construct a women's memorial at the entrance to Arlington National Cemetery, reflect the desire to commemorate the contributions of women to American history and culture.

A Model Parkway

Mount Vernon Memorial Highway (MVMH) and its successor, the George Washington Memorial Parkway (GWMP) were quite literally "model parkways." The design and construction of the original MVMH section attracted widespread attention in the popular and professional press, and the completed highway was praised as "America's Most Modern Motorway." Detailed descriptions of the parkway's design features and numerous photographs of the construction process appeared in professional journals, Bureau of Public Roads publications, and books on highway construction.

While MVMH received unprecedented attention, it was neither the first federally authorized parkway nor the first roadway to employ the design features for which it was so widely praised. The Rock Creek and Potomac Parkway, located across the river in the District of Columbia, was established by Congress in 1913, and thus deserves the title of first federal parkway, even though funding problems delayed its completion until several years after MVMH was constructed.⁶ Nearly all the memorial highway's traffic circulation and landscape architecture components had been employed in the design of earlier parkways, most notably in the pioneering motor parkways of Westchester County, New York.⁷ The success of

⁶ Timothy Davis, "Rock Creek and Potomac Parkway, HABS Report No. DC-663," Historic American Buildings Survey, National Park Service, U.S. Department of the Interior, Washington, D.C., 1992.

⁷ E. W. James, "Parkway Features of Interest to the Highway Engineer," Public Roads 10 (April 1929): 21-28; Jay Downer, "County Parks and Roadside Development in Westchester County, N.Y.," in J. M. Bennett, Roadside Development (New York: The MacMillan Company, 1929), 173-82; Downer, "Principles of Westchester's Parkway System," Civil Engineering 4 (February 1934), 85-87; "How Westchester Treats its Roadsides," American Civic Annual, 1930, 165-67; Gilmore Clarke, "The Parkway Idea," in The Highway and The Landscape, ed. Brewster Snow, (New Brunswick, N. J.: Rutgers University Press, 1959), 32-55.

Westchester County's parkway system convinced the BPR to incorporate its design features in the plans for MVMH. The BPR included Westchester County Park Commission (WCPC) veterans on the MVMH design team. Jay Downer, chief engineer for the WCPC, and Gilmore Clarke, the commission's chief landscape architect, were engaged as expert consultants throughout the project. Clarke also designed the bridge treatments and served as one of the project's chief spokesman. One of the WCPC's horticulturalists, Henry Nye, was hired to supervise the planting operations and former WCPC landscape architect Wilbur Simonson oversaw the day-to-day design and development of the parkway landscape.⁸

While MVMH did not possess any stunning new design innovations, it applied the lessons of Westchester County in a nationally prominent application, and introduced modern parkway design principles into federal highway building practice.⁹ The BPR took over a thousand photographs of the development process, placed numerous articles in professional journals, and produced a thirty-minute film and several publications on the memorial highway. In a lengthy career with the Bureau of Public Roads and the Public Roads Administration, Wilbur Simonson continued to serve as an intermediary between landscape architects and highway engineers, lecturing and publishing widely on the desirability of "complete highways" that combined sophisticated engineering features with aesthetic concerns. Thus, while the design of MVMH itself was only moderately innovative, it significantly impacted subsequent parkway and highway development on a national level.

Design and construction features specific to MVMH that were considered noteworthy by contemporary highway experts included the extensive landfilling operation needed to construct the roadway through the marshes and estuaries of the Potomac riverfront, and the sprawling grade-separated interchange at the intersection of MVMH and U.S. Route 1. While this was not the first cloverleaf interchange in the country, it was the first one to be built by the federal government.¹⁰ Equally impressive to contemporary observers were the fast-track construction

⁸ U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction (Washington, D.C.: Government Printing Office, 1930).

⁹ The BPR produced a widely requested booklet on the parkway even before the project was completed (U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction). The BPR distributed this publication to highway departments, park departments, and private individuals throughout the county. The BPR also organized tours of MVMH to accompany the annual meetings of various national and international associations of road builders and highway officials. Clarke was a major champion of the 1920s-1930s parkway building movement. He featured MVMH along with the WCPC efforts in numerous articles on parkway and highway design (see bibliography for a more complete listing).

¹⁰ The interchange between U.S. 1 and U.S. 9 (State Routes 4 and 25) at Woodbridge, New Jersey, constructed in 1928, is generally acknowledged to be the first full cloverleaf in the United States. For more information on the evolution of this important transportation feature, see Carl Condit, American Building Art: The Twentieth Century (New York: Oxford University Press, 1961), 283; and Christopher Tunnard and Boris

schedule needed to complete the project in time for the bicentennial celebration in February 1932, and the comprehensive design process itself. Building MVMH required the careful coordination of large-scale civil engineering, urban planning, and landscape beautification concerns. The successful collaboration was heralded as a model of cooperation between landscape architects, engineers, and planning professionals. MVMH was also one of the first highway design projects to rely extensively on aerial photography. The scenic easements secured to protect the historic character of MVMH in and around Alexandria were another relatively innovative procedure for the time.

The northern sections of the GWMP received less popular acclaim than the original MVMH segment. This was due in part to the inability of postwar designers to generate the extravagant media attention evoked by the George Washington bicentennial celebration, and in part to growing public familiarity with high speed motorways. Nevertheless, highway experts and landscape architects praised the postwar extension of GWMP for its successful application of parkway principles to the demanding requirements produced by higher traffic volumes and larger, more powerful automobiles. The attractive design of GWMP is all the more noteworthy given the generally disappointing quality of much highway construction completed in the postwar toll road and interstate highway era. The stretch of GWMP just north of Key Bridge literally became a text book example of modern highway design. Drawings and photographs of the GWMP ascending the Potomac Palisades appeared in several highway design books published in the 1950s and 1960s.¹¹

Today, a drive along the GWMP provides a thorough lesson in the history of twentieth-century parkway design. Beginning at Mount Vernon, one progresses from the narrow, undivided roadway winding through the woods just north of Washington's estate to the open terrain and grassy traffic islands in the suburb of Wellington, and then on to the continuous safety medians and wider traffic lanes added during the relocation and renovation of the parkway around National Airport. North of Washington, the motorist encounters the long, continuous curves, widely separated road alignments, and soaring exposed-concrete bridges that characterize the postwar parkway construction above the Potomac Palisades. Traversing the eight-lane Capital Beltway from Virginia to Maryland to reach the Clara Barton Parkway provides a stark reminder of the more usual course of late-twentieth century American highway development.

Pushkarev, Man-Made America: Chaos or Control? (New Haven: Yale University Press, 1963), 162.

¹¹ Photographs or drawings of this segment appear in Brewster Snow, ed., The Highway and the Landscape (New Brunswick, N.J.: Rutgers University Press, 1959); Lawrence Halprin, Freeways (New York: Reinhold Publishing Company, 1966), 37; Tunnard and Pushkarev, Man-Made America: Chaos or Control?, 202; and John Griffith, "The Complete Highway: Modern Transportation in the Light of Ancient Philosophy," Landscape Architecture 47 (January 1957), 353.

A Scenic and Recreational Resource

GWMP has preserved a wide variety of scenic and natural resources along the Potomac River in Maryland, Virginia, and the District of Columbia. The parkway's creation eliminated quarrying along the Potomac Palisades, helped defeat long-contemplated plans to exploit the hydroelectric potential of Great Falls, and protected an extensive stretch of the river from commercial and residential development. Two nature reserves, Dyke Marsh and Roaches Run, provide important habitat for an abundance of native and migratory wildlife.

The parkway serves as a temporary or permanent home to more than 300 species of vertebrates. By preserving a long stretch of wildlife habitat along the Potomac River, it serves as a daily and seasonal migratory corridor for a wide variety of animals. The parkway provides habitat for many kinds of nesting and migratory birds including owls, neotropical warblers, woodpeckers, raptors, and a wide variety of waterfowl. Hawks and other birds of prey migrate through the parkway and nest on parkway land. The most common mammals found within the parkway boundaries are whitetail deer, eastern grey squirrels, mice, shrews, woodchuck, and beaver. Grey fox are the only significant native predatory mammals, but feral cats are populous in some areas. Other invasive exotic species include gypsy moths, starlings, English sparrows, and Norwegian rats. Many species of reptiles and amphibians are also found throughout the parkway.¹²

The parkway was originally intended primarily as a recreational driving route, but it also provides opportunities for a wide variety of outdoor pursuits. An 18.5-mile paved multi-use trail parallels the main parkway drive from Rosslyn to Mount Vernon, serving a rapidly increasing population of joggers, bicyclists, walkers, and roller-bladers. Three marinas cater to power boaters, sailors, and windsurfers. A diverse array of users enjoy the parkway's numerous picnic areas and scenic pullouts.

A Vital Transportation Route

The earliest promoters of Mount Vernon Avenue hoped that the proposed roadway would both enhance tourist access to Mount Vernon and improve general transportation between Alexandria and Washington, thus encouraging economic development throughout the region. Pockets of suburbanization began to appear along the area's electric railway lines at the end of the nineteenth century, but only the most optimistic civic boosters could have predicted the enormous suburban growth that accompanied the expansion of the federal government during and after WWII. GWMP and its less scenic step-sister, the Henry G. Shirley Memorial

¹² "1994 George Washington Memorial Parkway Resource Management Plan," 11.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 13)

Highway, played important roles in encouraging and directing the rapid suburbanization of Arlington and Fairfax counties. Increased commuter traffic, together with the expansion of National Airport, eventually required the widening and realignment of several sections of MVMH to improve traffic flow in the most heavily traveled stretch between Alexandria and Washington. The northern segment of GWMP also carries heavy commuter traffic from suburban Maryland, while also providing access to the Capital Beltway (I-495) and Dulles International Airport. Continually rising traffic volumes have necessitated the widening of GWMP between Rosslyn and Theodore Roosevelt Memorial Bridge, and mandated additional improvements where GWMP connects with Spout Run Parkway.

EARLY HISTORY OF THE GWMP CORRIDOR

The thirty mile stretch of the Potomac River between Mount Vernon and Great Falls has a long and rich history as a settlement area and transportation corridor. The parkway's promoters took every opportunity to emphasize the route's historic importance. A brief review of the development of this region provides the necessary background for understanding the historical forces leading to the creation of GWMP. While most contemporary parkway projects were presented as linear parks designed to spread recreational opportunities throughout the surrounding city, the road to Mount Vernon was heralded from the start as a "Highway of History." Early descriptions of the proposed parkway included lengthy accounts of the region's development and lavished attention on the historic figures who journeyed over primitive colonial roads on their way to "civilize the wilderness" and participate in legendary battles and political events. Guidebooks and promotional materials described Native American settlements and recounted John Smith's pioneering explorations to the falls of the Potomac at the beginning of the seventeenth century. They attempted to trace the history of colonial roads and Indian paths, recounting the travels of George Washington, General Braddock, Lafayette, and other luminaries along the shores of the old King's Highway or colonial post road. The lengthy effort to construct a memorial avenue to Mount Vernon eventually became part of the historical tale. Once MVMH was completed, its significance as a commemorative landscape and precedent-setting highway design was widely celebrated. While the naturalistic landscape-planning principles of the Westchester County parkway system eventually dominated the parkway's design, the long emphasis on the route's historical associations sets GWMP apart from most other American parkways.¹³

Native American Settlement

The fertile soils, relatively mild climate, and abundance of fish, shellfish, waterfowl, and game made the area below the Little Falls of the Potomac attractive to a succession of Native American groups. Archeological evidence dating back as far as 6000 B.C. suggests that a highly mobile native population occupied temporary campsites located around major resource concentrations near springs, falls, and stream junctions. At the time of initial European contact the region was inhabited by a number of Algonquin-speaking groups, who lived in semi-permanent villages located at creek mouths and points of land, where they cultivated corn, beans, pumpkins, melons, gourds, and potatoes in addition to engaging in seasonal hunting and gathering activities. Native agriculture patterns and the practice of burning away undergrowth to maintain a favorable environment for deer and other game produced a more open, park-like landscape than exists today. Currently, deep woods and heavy underbrush

¹³ Two other federal parkways authorized in the 1930s, the Colonial Parkway connecting Jamestown and Yorktown, Virginia, and the Natchez Trace Parkway between Nashville, Tennessee, and Natchez, Mississippi, followed MVMH's lead in combining historic and natural features.

press against the Potomac riverfront except where carefully managed by park maintenance forces.¹⁴

When English explorer John Smith sailed up the Potomac to the Little Falls in 1608, he encountered numerous settlements on both sides of the river. These villages consisted of up to 100 houses, but were generally much smaller. The largest were occasionally surrounded by wooden palisades designed to protect against depredations from their Iroquois neighbors to the north. The largest of the early colonial era settlements was Piscataway, located at the confluence of the Potomac and the creek that now bears the tribe's name. There were also significant villages at Occoquan Creek, Little Hunting Creek, Great Hunting Creek, the Eastern Branch (now called the Anacostia River), and Analostan (now Theodore Roosevelt) Island. Dugout canoes afforded the most convenient means of travel along the river, but well-defined paths led through the woods and were occasionally improved by the construction of pole bridges across small streams and swamps. One of these trails extending along the high ground between the Rappahannock and Great Hunting Creek served as an important long distance travel route along the coastal plain. While the Algonquin-speaking coastal tribes and the Siouan tribes of the piedmont were traditional enemies, there was considerable trade up and down the river long before European settlers arrived, with coastal goods being exchanged for items from as far away as Lake Superior.¹⁵

GWMP in the Colonial Era

European traders made frequent forays up the Potomac during the first few decades of the seventeenth century, but there were few attempts to establish permanent settlements in the region until the second half of the century. King Charles II made several large grants in 1649, but political troubles in England and friction with the native inhabitants discouraged immediate development. A few landowners amassed vast tracts of property, which they generally held for speculative purposes without actually settling on their holdings. The original patentees of

¹⁴ Christian Feest, "Virginia Algonquians," in Handbook of North American Indians, vol. 15, Northeast, Bruce Trigger, volume editor; William C. Sturtevant, series editor (Washington D. C.: Smithsonian Institution, 1978), 253-270; Fairfax Harrison, Landmarks of Old Prince William (Richmond, 1924; reprint edition, Baltimore: Gateway Press, 1987), 19-20; Frederick Gutheim, The Potomac (New York: Holt, Rinehart and Winston, 1949; reprint, Baltimore: Johns Hopkins University Press, 1986), 23-26, 43; Paul Inashima, Archeological Investigation of Selected Construction Locales Along the Mount Vernon Memorial Highway (United States Department of the Interior, National Park Service, 1985).

¹⁵ Feest, "Virginia Algonquians," 253-260; Harrison, Landmarks of Old Prince William, 19-20, 143, 445; Herman Friis, Geographical Reconnaissance of the Potomac River Tidewater Fringe of Virginia from Arlington Memorial Bridge to Mount Vernon (Washington, D.C.: Association of American Geographers, 1968), 6; Nan Netherton, Donald Sweig, Janice Artemal, Patricia Hickin, and Patrick Reed, Fairfax County, Virginia: A History (Fairfax, Virginia: Fairfax County Board of Supervisors, 1978), 20.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 16)

the land that would eventually comprise a large portion of Mount Vernon Memorial Highway were the Brent family, whose extensive holdings dated to the mid 1650s and stretched along the Potomac from Aquia Creek to Great Hunting Creek. During the late 1670s, the aggressive military campaign associated with "Bacon's Rebellion" largely eliminated the threat of Indian attacks. By the end of the seventeenth century, disease, warfare, and westward migration more or less eliminated the native population. The reservations granted to the various tribes along the river were divided and sold. Few above-ground traces of their occupation remain.¹⁶

As late as 1700 there were still only a few widely scattered colonists in the future GWMP area. The beginning of the eighteenth century saw a marked increase in settlement, as the tobacco frontier worked its way up the Potomac in search of fertile, unexploited soil. The first plantations were usually located on high ground near the river, often on necks of land protruding into the Potomac or in sheltered estuaries, where wharves were built to ship and unload supplies and ship tobacco. Many of the larger plantations, such as Belvoir, Gunston Hall, and Mount Vernon, were not established until the 1730s or 1740s, when the colonial population grew rapidly. Fairfax County was formed in 1742. Within ten years over 95 per cent of the land within the county had been titled and five churches were established. By this time, small trading centers had begun to develop around the official tobacco inspection stations established at Alexandria (originally known as Belhaven), at Georgetown, and at the mouth of Pimmit Run just below Little Falls. As the highest point of unimpeded navigation on the river, the area around Little Falls seemed destined to develop into an important trading and farming area. Several large tracts were granted in this vicinity at the beginning of the eighteenth century. Grants to Alexander Scott covered the territory between Difficult Run and Pimmit Run and included another 770 acre section north of Pimmit Run. Daniel McCarty's extensive Sugarlands plantation was located further north near Great Falls. Thomas Lee quickly amassed 16,000 acres that stretched back into Loudon County and included most of the Virginia side of the river between Little Falls and Great Falls. Dreams of establishing a commercial center in this area faltered, however, and by the mid-eighteenth century Georgetown and Alexandria were prospering instead. By the end of the eighteenth century, most of the region's commerce passed through the wharves of Georgetown and Alexandria.¹⁷

¹⁶ Gutheim, The Potomac, 31, 38-39, 45, 49, 52-54; Inashima, Archeological Investigations, 24-25; Harrison, Landmarks of Old Prince William, 50-91; Edith Sprouse, Potomac Sampler: An Historical Index of the Mount Vernon Area (mimeographed guidebook at Library of Congress, 1961), 6. In 1985 NPS archeologist Paul Inashima reported that few undisturbed traces of early Native American habitation could be found due to natural erosion processes, commercial and residential development, road construction, and centuries of unsystematic independent artifact collection (Inashima, Archeological Investigation of Selected Construction Locales Along the Mount Vernon Memorial Highway), 50.

¹⁷ Friis, Geographical Reconnaissance, 10-11; Inashima, Archeological Investigation, 25; Harrison, Landmarks of Old Prince William, 107-108, 141-151, 483; John Stilgoe, Common Landscape of America, 1580-1845 (New Haven: Yale University Press, 1982), 58-77.

The spread of settlement and expansion of the plantation economy was accompanied by sporadic improvements in the regional transportation network. The river itself continued to serve as the area's major transportation artery. It was much easier to sail or row a boat along the river than to negotiate the thick woods, tidal marshes, and broad estuaries that bordered the Potomac throughout most of the coastal plain. Streams such as Dogue Creek, the Occoquan, Four Mile Run, and Great Hunting Creek posed major obstacles to overland travel. At the same time, they provided direct access to widely scattered plantations, at least until the excessive siltation caused by tobacco farming obstructed channels that had formerly admitted substantial trading vessels. In the northern half of the future GWMP corridor, the steep cliffs and deep ravines formed where the river and its tributaries cut through the piedmont escarpment made travel along the Potomac shoreline equally impractical.¹⁸

The first roads in the area stayed well inland, sticking to the high ground whenever possible and giving wide berth to the coastal marshes and estuaries (Figure 1). The first improved road was the Potomac Path, which initially followed an old Indian path between the Rappahannock and the Potomac. This was surveyed and cleared as far as the Brent property at Aquia Creek by 1667 and eventually extended past the Occoquan toward the plantations forming south of the future site of Alexandria. The opening of the Occoquan ferry in 1691 allowed the Potomac Path to bypass the ford used by the old Indian path and pursue a more direct line to Alexandria, passing closer to the riverfront plantations. The two routes converged briefly to ford Pohick Creek, then the Potomac Path swung slightly to the east again, while the old Indian path, which became known as the "Back Road," stayed inland to avoid crossing Dogue Creek and Little Hunting Creek. The roads converged again south of Alexandria to ford Great Hunting Creek at Cameron's Crossing, where the creek narrowed sufficiently to present easy passage. U.S. Highway 1 now loosely follows the route of the old Potomac Path, while Telegraph Road is thought to be the nearest modern successor to the original Indian trail.¹⁹

The Potomac Path, which was also known as the King's Highway, was one of the major long distance roadways of the colonial and early federal eras. With the establishment of ferry

¹⁸ Harrison, Landmarks of Old Prince William, 445; Netherton et al, Fairfax County, 20, 178.

¹⁹ Harrison, Landmarks of Old Prince William, 445-447; Netherton et al, Fairfax County, 20. Additional information on the routes described in this section comes from various maps reproduced in Richard Stephenson's The Cartography of Northern Virginia: Facsimile Reproductions of Maps Dating from 1608 to 1915 (Fairfax, Virginia: History and Archeology Section, Office of Comprehensive Planning, Fairfax County, Virginia, 1981). The difference between the Potomac Path and the old Indian path, or "Back Road" is best visualized in the northern Virginia portion of Herman Boye's 1826 maps of Virginia (Stephenson, The Cartography of Northern Virginia, 39). The exact location of the King's Highway, Indian Path and other roads in the GWMP area is still a matter of debate. Fairfax County historian Donald Sweig cautions that the routes and nomenclature of roads in the GWMP corridor have changed so often that it is probably impossible to definitively reconstruct their history (telephone conversation between author and Sweig, 28 March 1994).

service across the Potomac at Clifton's Neck in 1745, it became a key link in the main post and stage route along the Atlantic coast. The spur to Alexandria also served as an important connection between the lower colonies and the rapidly developing Shenandoah Valley country. By 1755 two trade routes were established between Alexandria and the Shenandoah Valley. After departing from the Potomac Path between Great Hunting Creek and Four Mile Run, these roads headed directly inland to avoid the steep gorges along the Potomac River, crossing the Blue Ridge at William's Gap and Vestal's Gap. The Vestal Gap road, also known as the Upper Church Road, became the primary route to Leesburg (settled in 1749) and across the Blue Ridge to Winchester (settled in 1744), evolving into the present Virginia State Highway 7. This was the route traveled by General Braddock and his young aide-de-camp George Washington in 1755 on their ill-fated attempt to capture Fort Duquesne and eliminate the French and Indian threat to the British colonies.²⁰ Two lesser mid-eighteenth century roads radiated out of the tobacco inspection station at Pimmit Run. The Falls Rolling Road ascended the ravine north of Pimmit Run before doubling back to meet the Vestal Gap Road at the junction that would become Falls Church. The Sugarlands Rolling Road went from Pimmit Run north toward McCarty's Sugarlands plantation, merging with the Vestal Gap Road at Difficult Run. Another significant rolling road wound inland from the Washington property, sticking to the high ground between Pohick and Accotink creeks and eventually joining up with Braddock's Road in the western portion of Fairfax County.²¹

The GWMP Transportation Corridor in the Nineteenth Century

During the nineteenth century the GWMP corridor was the site of several competing transportation systems. The region's proximity to the seat of government and its advantageous position along a natural route of commerce between the Shenandoah and Ohio valleys and the Atlantic coast made it a prime location for speculative ventures employing the latest advances in transportation technologies and financing systems. While few of these ventures fulfilled their investors' hopes, they left a lasting legacy on the landscape bordering the Potomac River between Mount Vernon and Great Falls.

The three major influences on the transportation landscape of the GWMP corridor during the first half of the nineteenth century were the construction of canals paralleling the Potomac

²⁰ One of the reasons their expedition met with disaster was that the path was in such poor condition soldiers were forced to expend considerable time and energy improving it for the heavy wagons that carried their supplies.

²¹ Harrison, Landmarks of Old Prince William, 445-447, 450, 480-82; Netherton et al, Fairfax County, 50. Harrison and Netherton et al only mention the Vestal Gap road, but a second route from Alexandria to the Shenandoah Valley via William's Gap is clearly marked on Joshua Fry and Peter Jefferson's 1755 map of Virginia and Maryland, which is reproduced in Stephenson, The Cartography of Northern Virginia, 25. Information on Braddock's road and Washington's tobacco rolling road is from Albert Rose, Historic American Roads, from Frontier Trails to Superhighways (New York: Crown Publishers, 1976), 15-16.

River, the erection of bridges across the Potomac at Little Falls and Alexander's Island (the site of today's 14th Street Bridge), and the blossoming of the toll road era, which markedly increased the mileage and quality of the region's road system. The institution of steamboat service along the Potomac in 1815 was also significant, greatly shortening the trip between Richmond and Washington and serving as the primary means of transportation to Mount Vernon until the opening of the electric railway in 1892. Electric railways played an important role in the region at the end of the nineteenth century and the beginning of the twentieth. They were not developed until after the first proposals for Mount Vernon Memorial Avenue, however, and will be discussed in detail later.

Turnpikes

The American system of road maintenance, inherited from common English practice, was to regard roads as local responsibilities, to be improved or ignored as the local population saw fit. Public indifference to highway improvements was especially pronounced in tidewater Virginia and the Potomac region, where the population was widely scattered and waterways provided a viable means of alternative travel. The preponderant regional road type, the "rolling roads," were crude tracks designed to transport hogsheads of tobacco over short distances rather than for comfortable travel. Long distance routes like the Potomac Path and the Vestal Gap Road were usually in dismal condition. At the beginning of the nineteenth century, the trip from Fredericksburg to Alexandria by stagecoach took sixteen hours of painful jostling over roots, rocks, stumps, and mud holes.²²

The individual states expressed little willingness to undertake road construction within their borders, leaving road construction in the hands of lackadaisical local governments. As a result, the early years of the nineteenth century witnessed a turnpike building boom, in which private corporations formed to build improved roadways along major trade routes. The Little River Turnpike, heading due inland from Alexandria to the Shenandoah Valley, was proposed as early as 1785. It is sometimes cited as the nation's first toll road, though it was not chartered until 1796, and only completed as far as Aldie by 1806. Most historians credit the Lancaster Turnpike, connecting the rich farming country around Lancaster, Pennsylvania with Philadelphia, as the first major turnpike in America. Construction began in February 1793 and a 24' wide road surfaced with broken stone and gravel was completed in 1796. The Lancaster Turnpike's immediate popularity and concomitant high profits spawned dozens of imitators throughout the country, despite occasional objections over the propriety of limiting road access to paying customers.²³

²² Harrison, Landmarks of Old Prince William, 561; Rose, Historic American Roads, 70.

²³ Rose cites the Little Falls Turnpike as the first turnpike in the nation, but this contradicts the charter and construction dates provided by Harrison (Rose, Historic American Roads, 22; Harrison, Landmarks of Old Prince

Changing settlement patterns and the increasing prominence of Alexandria and Georgetown as regional shipping centers ensured that the future GWMP area participated heavily in the nationwide turnpike-building boom (Figure 2). By the late eighteenth century the combined effects of inheritance and a declining local tobacco economy had broken up most of the larger plantations along the Potomac into smaller holdings. Agricultural diversification and a more numerous and broadly spread population created a demand for better local roads, while the competition between Georgetown and Alexandria merchants for the lucrative Shenandoah Valley trade resulted in the construction of long-distance turnpikes and the erection of substantial bridges across the Potomac River and its tributaries.²⁴

Prior to the completion of Long Bridge in 1809, traffic between Alexandria and Washington crossed the Potomac upstream at Georgetown via Mason's Ferry. George Mason III of Gunston Hall had purchased Analostan Island (today's Theodore Roosevelt Island, then known as Mason's Island or Barbadoes) in 1714. The family established a hand-operated ferry across the Potomac in 1737, adding a stone causeway between the north end of the island and the Virginia shore in 1808. This conveyance remained in operation until 1868. It markedly increased traffic between Alexandria and Georgetown, contributing to the growth of both communities and producing a road between Mason's Island and Alexandria. A ferry from Alexandria to the mouth of Oxon Creek catered to travelers bound for Annapolis, while a third ferry, located upstream below Little Falls, began operation in 1738 to serve traffic between Georgetown and the Shenandoah Valley.²⁵

These ferries and the bridges that succeeded them became the focal points of the new turnpikes. The desire of Georgetown merchants to build a turnpike that would supplant the old Vestal Gap road and allow them to lure the Shenandoah Valley trade away Alexandria provided the motivation to erect the first bridge across the Potomac. In 1797 the Georgetown Potomac Bridge Company constructed a wooden covered bridge across the river at the ferry site below Little Falls, in the approximate location where L'Enfant indicated the need for a crossing in his 1791 plan for Washington. Designed by Timothy Palmer of Newburyport, Massachusetts, this structure collapsed in 1804. Its replacement, designed by Theodore Burr and employing the famous "Burr Truss," only lasted six months before flood waters carried it

William, 564-65; Netherton et al, 461). Stilgoe also credits Alexandria with producing the first American turnpike in 1785 (Stilgoe, Common Landscape of America, 111-13, 128-32). Fairfax County historian Donald Sweig vouches for the accuracy of Harrison's interpretation, citing personal familiarity with the primary sources involved (telephone conversation between author and Sweig, 28 March 1994).

²⁴ Gutheim, The Potomac, 98-102; Friis, Geographical Reconnaissance, 11-19.

²⁵ Nan Netherton and Ross Netherton, Arlington County in Virginia, A Pictorial History (Norfolk, Virginia: The Donning Company, 1987), 30, 36; Netherton et al Fairfax County, 172, 201; Harrison, Landmarks of Old Prince William, 448; Friis, Geographical Reconnaissance, 19.

away. The next bridge on the site consisted of oak flooring suspended by heavy chains anchored in imposing stone abutments, giving it the name "Chain Bridge," which survives to this day, though the span has been repeatedly replaced, and no chains have been used in the structure for over a century. The flooring of the original Chain Bridge was swept away by a flood in 1810. The deck was replaced immediately. The bridge was severely damaged and rebuilt again in 1840. The chain suspension system was replaced with arch-reinforced timber trusses in the 1850s. This structure was raised even higher above the river on stone piers. It lasted until 1870, when it was destroyed by unusually severe flooding. The next bridge on the site was a wrought-iron truss structure, which was completed in 1874. The iron truss bridge remained in use until heavy automobile and truck traffic required its replacement in the 1930s. The current "Chain Bridge" still uses the mid-nineteenth century stone piers, but it is a continuous steel girder structure designed by Modjeski, Masters and Chase in 1939.²⁶

The second bridge across the Potomac was constructed by the Washington Bridge Company in 1808-1809 at the site of the present-day 14th Street bridges. It was known as Long Bridge, since it spanned the wide channel between Alexander's Island and the end of Maryland Avenue in Washington. The original Long Bridge was a wood truss structure with draw spans at either end to allow passage upstream to Georgetown harbor. During the War of 1812 retreating Americans troops destroyed the draw span on the Virginia side to forestall British pursuit. The British, in turn, burned the Washington end to prevent the Americans from returning. Traffic was restored by 1818, but the bridge was heavily damaged by flooding in 1831. The federal government stepped in and rebuilt the bridge in 1831, eliminating the previous toll charge. A parallel structure was built in 1863. Rocks and other debris were dumped around the abutments in an attempt to reduce flood damage, significantly impeding the flow of the river and increasing siltation upstream.²⁷

The Washington and Alexandria Turnpike Company was incorporated in 1808 to construct a road from Alexandria to the Virginia terminus of Long Bridge. The company's charter stipulated that the roadway be between 30' to 100' wide, and gave it authority to construct a toll bridge over Four Mile Run. This turnpike more or less followed the route of today's U.S. Highway 1, before heading directly into Alexandria. In 1809 a competing turnpike company improved the old road to Mason's ferry to serve traffic to Georgetown. This road kept well away from the riverfront, ascending the ridge south of Arlington before dropping down along the valley of Long Branch to cross Four Mile Run. It then headed back toward the Potomac to join the Washington-Alexandria road south of the toll gate at the Four Mile Run bridge.

²⁶ Harrison, Landmarks of Old Prince William, 565-70; Netherton et al, Fairfax County, 201; Donald B. Meyer, Bridges and the City of Washington (Washington, D.C.: Commission of Fine Arts, 1974), 3-5.

²⁷ Friis, Geographical Reconnaissance, 19; Netherton and Netherton, Arlington County, 46; Meyer, Bridges of Washington, 26-34.

Today's Arlington Ridge Road approximates the course of this historic roadway, but most of the original route has been obliterated by the creation of Arlington National Cemetery, the Navy Annex, and the Henry G. Shirley Memorial Highway. At the end of the nineteenth century, the old Georgetown-Alexandria road was still in use, and was given strong consideration as the route of the proposed Mount Vernon Memorial Avenue.²⁸

The turnpike era made it economically viable to shorten the route from Alexandria south toward Mount Vernon by bridging Hunting Creek slightly east of the old ford at Cameron's Crossing. The Great Hunting Bridge Company was chartered for this purpose in 1807, and completed a toll bridge at the south end of Alexandria's Henry Street in 1810. The Hunting Creek Turnpike took a more easterly route than the old King's Highway, heading south along the eastern edge of the high ground below Great Hunting Creek on the approximate route of today's Fort Hunt Road. North of Wellington the turnpike veered inland to avoid crossing Little Hunting Creek, joining the King's Highway at Gum Springs. The Occoquan Turnpike Company was created in 1811 to extend the toll road to Occoquan, but these plans were not acted on until 1856, when the Alexandria, Mount Vernon, and Accotink Turnpike Company was chartered. This company bought out the Great Hunting Bridge Company and improved the road as far as Accotink. Renamed the Accotink Pike, this route vied with the old King's Highway as the primary road from Alexandria to Mount Vernon until the early twentieth century.²⁹

²⁸ Harrison, Landmarks of Old Prince William, 567-69. Netherton et al, Fairfax County, 194. The route of the Alexandria-Georgetown appears on numerous early nineteenth century maps including James Hamilton Young's 1835 "Tourist's Pocket Map of the State of Virginia" and the 1841 "Chart of the Head of Navigation of the Potomac River Shewing [sic] the Route of the Alexandria Canal" (Stephenson, The Cartography of Northern Virginia, 43-44). Discussions of the route's merits as a basis for the Mount Vernon Memorial Avenue appear in "Mount Vernon Avenue: The Committee Examines a Portion of the Country," National Republican (Washington, D.C.), 17 October 1887 and in United States Congress, House, National Road from the Aqueduct bridge to Mount Vernon, Va. (Report prepared by Lieut. Col. Peter C. Hains, Corps of Engineers, U.S. Army. 51st Cong., 1st Sess., 1890, Executive Doc. No. 106).

²⁹ Harrison, Landmarks of Old Prince William, 567-73. There is considerable disagreement among various secondary sources and historical maps as to the location of the Potomac Path and its subsequent variations. For example, C.D. Choates's 1910 Map of Fairfax County (reproduced in Stephenson, The Cartography of Northern Virginia, 127) designates Telegraph Road as the King's Highway and calls U.S. Route 1 the Accotink Pike, while the official U.S. Army Corps of Engineers' map accompanying Col. Peter C. Hains's report on the proposed Mount Vernon Avenue calls Route 1 the "Mount Vernon Road" and refers to present day Fort Hunt Road as "Accotink Pike" (B.F. Mackall and G.P. Strum, "Portions of Alexandria and Fairfax Counties Virginia, Showing the Routes Surveyed for a National Road from Washington, D.C. to Mount Vernon, VA." to accompany U. S. Congress, House, National Road from the Aqueduct bridge to Mount Vernon, Va.). Plate 6 of G. M. Hopkins's 1879 Atlas of Fifteen Miles around Washington (Stephenson, The Cartography of Northern Virginia, 90) corresponds to the government nomenclature.

The major turnpikes in the region headed inland, conceding the continued superiority of the Potomac as an avenue of travel and commerce. With the completion of Chain Bridge guaranteeing a dependable crossing, the Georgetown and Leesburg Turnpike Company was chartered in 1813 to improve the road between the two towns. The old "back road" between Alexandria and Little Falls was also improved around this time, joining the Georgetown-Leesburg turnpike at Pimmit Run. The Georgetown-Leesburg turnpike followed the existing road from Georgetown to Little Falls, where it picked up the route of the old Sugarlands Road, crossing Difficult Run with a modest bridge and continuing on to Leesburg. The "Georgetown Pike," as the route is still known, became the principal thoroughfare to Leesburg until the Alexandria-Leesburg Turnpike, was completed in 1838. The "Leesburg Pike," as the Alexandria-Leesburg road is called today, provided Shenandoah Valley traffic with a more southerly outlet on the Potomac that enabled traffic to bypass the increasingly constricted bend in the Potomac River between Georgetown and Alexandria. A cutoff from the Leesburg Pike at Falls Church led to Georgetown via Mason's Ferry. Yet another turnpike, the "Columbia Pike," provide direct access from the Leesburg and Little River turnpikes to Washington across Long Bridge. The settlements that grew up around the junctions of these turnpikes served as centers of development for Arlington and Fairfax counties.³⁰

Canals

Despite the turnpike-building frenzy, overland travel in the early nineteenth century remained a slow, laborious, and undependable endeavor. Travelers continued to make disparaging comments about the poor condition of Virginia roads and described them as obstacles to be avoided by any means possible. Few toll road companies lived up to the strict standards outlined in their charters. Many turnpike companies were poorly financed and went into bankruptcy when toll revenues failed to meet over-inflated expectations. The abandoned toll roads were ceded back to the local governments, which rarely invested in their upkeep. Even the best-maintained turnpikes were ill-suited for conveying large quantities of heavy, bulky commodities such as wheat, flour and coal, which abounded in the hinterlands and were eagerly sought by merchants in the coastal cities. The Potomac River offered an appealing alternative for bulk shipping, but the irregular water flow, together with the formidable obstacle posed by Great Falls, long delayed development of the transportation potential of the upper Potomac.

The Patowmack Canal

The idea of constructing a canal around Great Falls was proposed as early as 1769. After the Revolution, George Washington became an avid promoter of this scheme. Washington

³⁰ Harrison, Landmarks of Old Prince William, 565-70; Friis, Geographical Reconnaissance, 19;

believed that building a canal around Great Falls was vitally important to the economic, political, and social health of the nation. Turning the Potomac into an uninterrupted transportation artery stretching from Cumberland, Maryland to the Chesapeake Bay would theoretically counter sectionalist tendencies by binding coastal and interior settlements together through ties of commerce and communication. Washington thought that the access to raw materials provided by such a canal, combined with the vast water power of Great Falls, would produce a prosperous manufacturing center in northern Virginia that would eventually eliminate the reliance on slavery throughout the region.³¹

Washington served as president of a company formed in 1785 to develop a means of negotiating the falls. The town of Matildaville was laid out nearby to serve as construction headquarters, and speculators quickly bid up the price of land along the upper Potomac. At first the Patowmack Company believed it would be possible to secure passage by blasting rocks and ledges out of the way to clear an unobstructed channel. This strategy proved impractical and an ambitious canal project requiring six closely spaced locks was begun on the Virginia side of the falls. The engineering feats involved in the endeavor garnered international acclaim. The construction site became a popular destination for tourists and foreign visitors. The canal itself, completed in 1802, continued to draw curious onlookers. Despite the canal company's impressive technical achievements, the Patowmack Canal was a commercial failure. Toll revenues peaked in 1811. Legal and financial difficulties, together with the fact that the canal could only be used during the two months of highest water, kept the canal company at the brink of financial ruin until it was absorbed by the larger Chesapeake and Ohio Canal Company in 1828. Washington's dream of turning the Potomac into the country's principal east-west thoroughfare came to naught, but preserving the ruins of the Patowmack Canal was frequently cited as one of the reasons for extending GWMP to Great Falls. While the parkway project was not able to secure the entire Virginia shoreline from Washington to Great Falls, the remnants of Matildaville and the Patowmack Canal were saved by their inclusion in the Great Falls Park portion of GWMP. The American Society of Civil Engineers has designated the canal site a National Historic Civil Engineering Landmark.³²

The Chesapeake and Ohio Canal

The Chesapeake and Ohio (C & O) Canal might have fulfilled Washington's goal of transforming the Potomac River into a transportation route of national significance, had not legal, technical, and financial problems delayed completion until 1850, when the nation's

³¹ Netherton et al, Fairfax County, 203-206; Gutheim, The Potomac, 8, 252-55.

³² Harrison, Landmarks of Old Prince William, 547; Netherton et al, Fairfax County, 203-206; Gutheim, The Potomac, 252-57.

growing railroad system rendered it virtually obsolete. Chartered in 1823 as the Potomac Canal Company and renamed the following year, the C & O Canal Company began excavating a 184-mile-long ditch between Rock Creek in Georgetown and Cumberland, Maryland, on July 4, 1828. Unfortunately, the Baltimore and Ohio Railroad started building its track toward Wheeling, Virginia on the same day. Both companies hoped to become the primary link between the Atlantic coast and the prosperous Ohio River country. They fought protracted legal battles over the right to pass along the steep banks of the Potomac in constricted stretches such as Point of Rocks and Harpers Ferry. While the legal disputes and technical problems were eventually resolved, the slower canal boats could not compete with the railroad, and previous plans to extend the canal beyond Cumberland were abandoned. The C & O Canal still offered an economical means of conveying heavy, bulky, and imperishable commodities such as coal, wheat, limestone, and building stone, however. This trade contributed greatly to the economy of Georgetown and Alexandria during the mid-nineteenth century. The canal remained in use until the early twentieth century, but revenues declined steadily. The federal government acquired the property after damage from severe flooding forced the company to cease operations in 1924. The C & O Canal was placed under control of the National Park Service in September 1938. Most of this land was designated the Chesapeake and Ohio Canal National Monument in January 1961. It was redesignated Chesapeake and Ohio Canal National Historical Park in January 1971.³³

The Alexandria Canal

The third important canal in the area was built by Alexandria merchants in order to entice traffic from the C & O Canal past Georgetown to their own wharves and warehouses. The canal offered an alternative to the troublesome bend of the Potomac between the two cities, which had become increasingly obstructed due to siltation and the reconstruction of Long Bridge. A similar canal scheme had been proposed following the completion of the Patowmack Canal, but the War of 1812 intervened before work could begin. Navigating conditions on the river had continued to deteriorate during the mid-nineteenth century. At periods of low water boats had to be laboriously hand-poled from Long Bridge to the barge basin at the mouth of Rock Creek, passing through shallow channels surrounded by foul-smelling mudflats.³⁴

The Alexandria Canal Company was chartered in 1830 to construct a canal from the north edge of the city to a point on the Virginia shore several hundred yards above the causeway to

³³ Gutheim, *The Potomac*, 256-66; Office of Public Affairs, National Park Service, U.S. Department of the Interior, *The National Parks Index 1991* (Washington, D.C.: Government Printing Office, 1991), 43.

³⁴ Netherton et al, *Fairfax County*, 207-208; Harrison, *Landmarks of Old Prince William*, 549-51.

Mason's Island. Construction began the following year and was completed in December 1843. The most outstanding feature of operation was the Aqueduct Bridge, which carried the Alexandria Canal across the Potomac to its intersection with the C & O Canal at the foot of 35th Street in Georgetown. The canal boats floated above the Potomac along a quarter-mile-long wood trough supported by arch-reinforced timber trusses that rested on eight stone piers and two massive masonry abutments. The stones for the piers were quarried from the Potomac palisades and floated downstream on barges.

Like its predecessors upriver, the Alexandria Canal Company was a victim of poor timing and over-inflated hopes. The C & O Canal failed to produce the desired volume of traffic, and the development of steam tugs suddenly tipped the balance back in favor of the river route through Washington and Georgetown. The shallow-draft tugs could move loads quickly and easily up the river, while the mules that towed boats up and down the canal had to rest repeatedly along their nine-mile journey.³⁵

After years of declining profits the canal was seized by the federal government at the outbreak of the Civil War. The water was drained from the Aqueduct Bridge and a roadway was built to move troops and supplies across the river. The bridge reverted to private hands after the war. The channel was put back into use for canal boats and a deck was built atop the structure in 1868 to serve pedestrians and vehicular traffic. Frequent complaints about the high tolls charged by the Aqueduct Bridge operators caused the Federal government to begin plans for a free bridge slightly upstream near the Three Sisters Islands. The government decided to condemn the Aqueduct Bridge instead, and bought out the company's interests in 1886. In 1888 the wood aqueduct was torn down and an iron truss bridge was constructed using the same piers. The structure continued to be called the Aqueduct Bridge, even though the replacement made no provision for canal traffic. The second Aqueduct Bridge underwent \$80,000 worth of repairs in 1908, but proved incapable of withstanding the stresses of motor truck traffic. Congress authorized its replacement in 1916. World War I intervened, and the new structure, known as the Francis Scott Key Bridge, was not completed until 1923. Key Bridge was built with five large reinforced concrete segmental arches, with open spandrels supporting a 50' deck providing room for a roadway, two trolley tracks, and two 8' sidewalks. An additional arch was added on the Virginia side in 1939 to carry traffic over the northern extension of GWMP. The old Aqueduct Bridge piers were not removed until 1962. The abutment on the Georgetown side remains in place.³⁶

Because the Alexandria Canal occupied a central location in an area that grew to become a major transportation corridor, little evidence of its former route survives. Cut off from the

³⁵ Netherton et al, Fairfax County, 207-208; Harrison, Landmarks of Old Prince William, 549-51.

³⁶ Myer, Bridges and the City of Washington, 7-13.

C & O Canal by the condemnation of the Aqueduct Bridge, and superseded by more efficient means of transportation, the canal served little purpose. The government briefly considered using the old canal bed when it surveyed routes for Mount Vernon Avenue in 1890, but nothing came of this project. The canal was filled in during the 1890s. The northern section was converted into the right of way for a spur of the Pennsylvania Railroad to connect Rosslyn with the main line between Alexandria and Washington. In 1896, the Mount Vernon, Washington and Alexandria Electric Railway appropriated a short section of the canal bed near Four Mile Run for its roadbed. Today, Virginia Highway 110 approximates the old canal route between Key Bridge and the Pentagon, and GWMP runs slightly east of the old channel between Four Mile Run and Alexandria. A portion of the old canal in Alexandria, including a lock, has been restored as part of a commercial and retail development project.³⁷

Railroads

The three major steam railroads intersecting the GWMP corridor headed directly away from the river and had little visible impact on the future parkway landscape, with the exception of the short stretch between Alexandria and Long Bridge. The completion of the Richmond, Fredericksburg and Potomac railroad (RF&P), greatly facilitated transportation between the Alexandria and Richmond and the lower South. From Fredericksburg, the RF&P headed east to follow the Potomac shore up to Woodbridge, where it crossed the Occoquan near the old King's Highway. Above Woodbridge, the RF&P continued in a northerly direction, passing through Lorton and west of Pohick before turning east along the valley of Cameron Run and Great Hunting Creek to enter Alexandria just below Duke Street. The Southern Railroad's Washington and Charlotte line also entered Alexandria along this route, while the Washington and Ohio Railroad (later the Southern Railroad's Virginia Midland Division) came south from Leesburg via Four Mile Run. These routes combined north of Alexandria to cross the Potomac via Long Bridge after it was reinforced in the 1870s. This bridge constituted the easternmost railway link along the Atlantic Coast. Alexandria thus became a major transshipment point and the Potomac Yards developed into a massive switching complex that dominated the landscape immediately north of the city. All proposals for the memorial road to Mount Vernon had to consider the best way to minimize the impact of this railroad network. The desire to reduce railroad crossings to a minimum played an important role in the 1928 decision to favor the riverfront route over inland options that provided more lofty vistas but necessitated overpasses at Four Mile Creek and Great Hunting Creek. Opponents of the

³⁷ The subsequent uses of the Alexandria Canal bed were traced by comparing U.S.G.S. Washington quads from 1891, 1895, and 1898, and the 1965 7.5 minute series Washington West and Alexandria quads.

riverfront route contended that constructing two additional overpasses was preferable to subjecting motorists to the sights, sounds, and smells of Potomac Yards.³⁸

Another effect of the railroads was to dramatically reduce long-distance traffic on the turnpikes. The drop in toll revenues forced many turnpike companies into bankruptcy, though the Little River Turnpike Company remained in business until 1896 and the Washington and Leesburg Turnpike Company lasted into the 1910s. The old toll roads generally became public highways, with many retaining their original names. Years of declining maintenance left the roads in dismal shape, however, and the towns and counties did little to improve conditions. By the 1880s there was widespread concern that the abysmal roads in Alexandria and Fairfax County were retarding the region's economic development. The spread of the electric railway system at the end of the nineteenth century contributed further to the decline of public highways in the region by offering swift and convenient access to many towns and tourist destinations, including Mount Vernon and Great Falls. The regional road network continued to deteriorate during the first two decades of the twentieth century, when the increasingly vocal demands of motorists, the creation of the Federal Aid highway system in 1916, and the revival of interest in the memorial highway to Mount Vernon finally began to promise some relief.³⁹

³⁸ Railroad company's names changed often. These designations are based on 1894 U.S.G.S. quads and Netherton et al, Fairfax County. The obstacles posed by the railroads are discussed in John Reavis, Mt. Vernon Avenue: A National Memorial Highway from Washington to Mt. Vernon (Washington, D.C.: Mt. Vernon Avenue Association, 1888), United States Congress, House, National Road from the Aqueduct bridge to Mount Vernon, Va., and United States Congress, Senate, Mount Vernon Memorial Highway (70th Cong., 1st Sess., 1928, Report No. 469). Proponents of the western or Ridge Route sent letters to local newspapers and to various federal agencies pleading their case and attacking the river route. See "Ridge Route Preferable for Mount Vernon Boulevard," Letter to from James Johnson of Urbana, Ill, to Editor, Washington Evening Star (7 February 1927); "Western Route Favored," Letter to the Editor from Blanche C. Howlett, Washington Evening Star (8 February 1927); and "Boulevard Route On River Opposed," Washington Evening Star (8 June 1928).

³⁹ Friis, Geographic Reconnaissance, 24; Netherton et al, Fairfax County, 527.

MOUNT VERNON: "THE AMERICAN MECCA"

Nineteenth-century writers and early MVMH advocates portrayed the journey to Mount Vernon as a patriotic pilgrimage route (Figures 3-4). Mount Vernon was cast as "the Nation's Shrine," "The Mecca of America," and "The Home and Tomb of the Immortal Washington." Guidebook writer A. J. Wedderburn dedicated his 1876 Mount Vernon Guide to "the LIBERTY LOVING PILGRIM who, as naturally as the Musselman turns to Mecca, comes to Mount Vernon to pay his tribute of respect to America's Greatest Son."⁴⁰ Similar rhetoric surrounded late-nineteenth century attempts to link Washington and Mount Vernon with a memorial avenue. Patriotic sentiments significantly shaped ideas of how the road and its surroundings were to be designed and experienced.

The Mount Vernon estate had been in the Washington family since the late-seventeenth century. In 1674 John Washington and Nicholas Spencer received a grant of 5,000 acres along the Potomac River between Dogue and Little Hunting creeks. In 1690 the land was divided between Spencer's heirs and George Washington's grandfather, Lawrence Washington, who received the northern portion of the property. In 1726 Washington's father, Augustine Washington, acquired the property. Augustine moved there in 1735 when George was three years old. Washington's father built the house that became the nucleus of the Mount Vernon mansion, but the family only stayed a short time before moving on to another property near Fredericksburg. Hunting Creek Plantation passed to George's older brother Lawrence in 1740. Lawrence renamed the estate "Mount Vernon" in honor of Admiral Edward Vernon, under whom he had served in the British Navy. Lawrence died in 1752, leaving the estate to his widow. George Washington took over the property upon her death in 1761.⁴¹

Under George Washington's ownership the estate grew from 2,126 acres to close to 8,000 acres and the house was remodeled and enlarged several times. Much of the surrounding land that is wooded today was open meadows or tilled fields during Washington's time. The plantation's 3,000 acres of cultivated fields were divided into five separate farms, each with its own supervisor, buildings, and slave work force. Tobacco was the primary crop until 1767, when Washington abandoned the soil-exhausting plant and switched to wheat and other grains

⁴⁰ A. J. Wedderburn, Mt. Vernon Guide (Alexandria, Virginia: author, 1876). These characterizations of the Mount Vernon pilgrimage experience appear in magazine articles on Mount Vernon such as "Mount Vernon As It Is," Harper's New Monthly Magazine 18 (March 1859): 433-451 and "The Homes and Haunts of Washington," The Century Magazine 35 (November 1887): 3-22; and in the innumerable guidebooks to Washington and its environs including Wedderburn's Mount Vernon Guide, Morrison, Stranger's Guide to Washington City (Washington, D.C.: author, 1888 [Fortieth Edition]), and Joseph West Moore's Picturesque Washington: Pen and Pencil Sketches (Providence: J.A. & R.A. Reid, 1888).

⁴¹ Mount Vernon Ladies' Association of the Union, Mount Vernon: A Handbook (Mount Vernon, Virginia: Mount Vernon Ladies' Association of the Union, 1985), 11-13.

in search of more stable and more sustainable yields. Tobacco and flour were shipped from the wharf below the mansion. Another wharf was located near Washington's grist mill on Dogue Creek. A tobacco rolling road headed inland from this point, enabling other planters to transport their crop to Washington's dock for transshipment.⁴²

During Washington's time, two dirt roads led from Mount Vernon to the King's Highway. The original road left the main highway a little above Washington's mill. In 1785 Washington ordered a lesser path to Gum Springs improved to provide a more direct route to Alexandria.⁴³ The roads converged and approached the mansion in a long straight line from the west. Two small porters' lodges were located about a mile from the house on the main approach avenue. Other smaller roads led to the various dependant farms.⁴⁴

Many travelers visited Mount Vernon during Washington's lifetime. The practice continued as the estate passed down through the hands of various distant relatives. Washington's nephew Bushrod Washington inherited the property upon Martha Washington's death in 1802. In 1829 Bushrod died and the estate passed to his nephew, John Augustine Washington, who died in 1832, leaving it to his widow. She died in 1850 and left the property to their son, John Augustine Washington, Jr. By the 1850s the bounds of the estate had shrunk considerably and the buildings and grounds were in disrepair. John Augustine Washington, Jr. petitioned Congress to buy the property as a national memorial, but these attempts were met with repeated refusals. In 1853 Ann Pamela Cunningham of South Carolina formed the Mount Vernon Ladies' Association of the Union in order raise funds to purchase the estate and prevent it from falling into further disarray or being sold to speculators. The noted orator Edward Everett toured the country giving speeches to raise money for the cause. By December 1858 the association had raised enough money to purchase the mansion, outbuildings, and the surrounding 200 acres.⁴⁵

⁴² Mount Vernon Ladies' Association of the Union, Mount Vernon: A Handbook, 16-30, Moore, Picturesque Washington, 281. The rolling road appear on Washington's own 1767 "Sketch of the Roads and Country between Little Huntg Ck. and Colchester," (Stephenson, Cartography of Northern Virginia, 28) and in Rose, Historic American Roads, 16.

⁴³ Reavis, Mt. Vernon Avenue: A National Memorial Highway from Washington to Mt. Vernon, 26.

⁴⁴ These roads appear on Washington's 1767 "Sketch of the Roads and Country between Little Huntg Ck. and Colchester," and his 1793 "A Map of General Washington's Farm of Mount Vernon," (Stephenson, Cartography of Northern Virginia, 28, 33). Nineteenth century sources cite the western road with the porters' lodges as the original entranceway and describe the new and old approaches ("Mount Vernon As It Is," Harper's New Monthly Magazine, 438; "An Account of a Visit Made to Washington at Mount Vernon, by an English Gentleman, in 1785," Pennsylvania Magazine of History and Biography 17 [1893], 76-82; Julian Ursyn Niemcewicz, "A Visit to Mount Vernon," American Heritage 16 [February 1964], 65-71).

⁴⁵ Mount Vernon Ladies' Association of the Union, Mount Vernon: A Handbook, 9, 121-122;

Most nineteenth-century visitors to Mount Vernon came down the river and approached via the path leading uphill from the wharf. It was possible to take a carriage from Washington or Alexandria, but the region's infamous roads made the steamboat more attractive to most travelers. The Alexandria, Mount Vernon and Accotink Turnpike Company cited the need to provide better service for Mount Vernon-bound tourists in their 1856 charter application.⁴⁶ A writer for Harper's New Monthly Magazine observed in 1859 that the main road was "a very pleasant one, with cultivated fields spreading out on every side." After reaching Gum Springs, however, he reported "the road that winds through the wooded ravines and up the timbered slopes of the old Mount Vernon estate, leading to the mansion, was rough and gullied." The original entrance from the west had been neglected and was no longer passable by wheeled vehicles.⁴⁷

Steamboat service along the Potomac began in 1815. Special trips carrying excursionists to Mount Vernon were advertised by the early 1820s. At first, this was an irregular service catering to holiday crowds, but regular twice-weekly departures were established by the 1850s. The first federal expenditure for improving access to Mount Vernon was an appropriation to dredge a channel to the wharf in response to the increased tourism that followed the estate's purchase by the Mount Vernon Ladies' Association. Work on this project began just before the Civil War. The war cut this operation short, and the steamer was impressed by the Federal government for war duty. Mount Vernon was declared neutral territory and soldiers from both sides visited the house. Daily steamboat service was instituted shortly after the war's end (Figure 5). The steamboat remained the favorite means of transportation to Mount Vernon until the electric railway from Alexandria was completed in 1892.⁴⁸ The steamers left Washington's Seventh Street wharf at 10 a.m. every day except Sunday, stopping at King Street in Alexandria and at Fort Foote on the way down to Mount Vernon, and at Fort Washington and Alexandria on the return trip. The trip took most of the day, returning to the Seventh Avenue wharf around 3:30 p.m.⁴⁹

Most guidebooks to Washington included a long section on Mount Vernon. They provided biographies of Washington and his family, along with extensive descriptions of the mansion's

⁴⁶ Netherton et al, Fairfax County, 267.

⁴⁷ "Mount Vernon As It Is," Harper's New Monthly Magazine 18 (March 1859), 438, 443.

⁴⁸ "Trip to Mount Vernon," (advertisement), National Intelligencer (Washington, D.C.), 3 July 1822; Edith Sprouse, "The Troublesome Road to Mount Vernon," Fairfax Chronicles 5 (May-July 1981): 1-2; Frank B. Lord (The Romantic Road to Mount Vernon. Alexandria, Virginia: Washington-Mount Vernon Memorial Book Corporation, 1932), 147.

⁴⁹ Wedderburn, Mount Vernon Guide, 5; Morrison, Stranger's Guide to Washington City, 59; Moore, Picturesque Washington, 279; Minutes of the Mount Vernon Ladies' Association of the Union, 1891, 36.

history and furnishings, and pointed out the sights to be seen along the steamboat route. The language of these descriptions was decidedly romantic. Guidebooks pointed out the U.S. Arsenal and reminded passengers that Lincoln's assassins were hanged behind its gloomy walls. The typical guidebook also identified the government insane asylum, with "its massive towers rising high above wooded heights." These two features faded from prominence once tourists began taking the overland route via electric railway and motor car. The electric railway also eliminated Fort Washington from the standard tourist route.⁵⁰

Since steamboat tourists approached Mount Vernon from the river, most nineteenth century tourist literature described the view of the mansion from the below, and detailed the walk up the hill from the landing (Figure 6). Engraved scenes of the wharf (Figure 7) and steamboat generally illustrated these accounts.⁵¹ The Mount Vernon Ladies' Association improved the road up the hill and rebuilt the wharf, adding a crude lean-to to shelter tourists. This rustic structure was replaced by a more elaborate pavilion in 1891 (Figure 8).⁵² Visitors arriving from the water passed directly by Washington's tomb on their way to the mansion. During the nineteenth century, visiting Washington's tomb was at least as important a part of the Mount Vernon tourist experience as exploring the mansion (Figures 9-10). Most modern visitors approach Mount Vernon by road and rarely make the effort to descend the hill to the tomb. Many tourists are unaware of the tomb's existence, regarding Mount Vernon more as an exceptionally well-furnished house museum than as a national shrine.⁵³

Most nineteenth century visitors were well-to-do, or at least respectably middle-class (Figure 11). The cost of the round trip ferry ride--\$1.00 a day throughout most of the nineteenth century--discouraged lower class visitors. In the late 1880s an electric railroad company began considering opening a line from Alexandria to Mount Vernon. This would attract larger crowds from a more broad segment of American society. The Ladies' Association enlisted financier Jay Gould's help to buy 33 acres outside the entrance to prevent vendors from erecting offensive lower-class establishments directly in front of the gate to Mount Vernon. The owner of the existing lunch room refused to sell, however, and made plans to expand his

⁵⁰ Morrison, Stranger's Guide to Washington City, 59-60.

⁵¹ "Mount Vernon As It Is," Harper's New Monthly Magazine, 434, 437.

⁵² Pavilion date supplied by Mount Vernon Ladies' Association Historian John Riley, in conversation with author, 2 August 1994.

⁵³ A variety of tomb postcards were available at the beginning of the twentieth century (as were images of the steamboat and landing), but more prosaic images of the house and grounds now dominate the souvenir racks.

operation to take advantage of the expected crowds.⁵⁴ In 1892, after personal appeals to the governor failed to prevent the electric railway company from pursuing its plans, the Ladies' Association began negotiating with the railroad in hopes of minimizing the damage. Company officials promised the railway would run its operation in a manner "thoroughly friendly and patriotic towards Mount Vernon."⁵⁵ The electric railway began service in September 1892. Admissions to Mount Vernon more than tripled between 1892 and 1893, rising from 26,966 to 87,685. In terms of percentage growth, this was by far the largest increase in the estate's history, far exceeding the rise in visitation associated with the completion of MVMH. As predicted, the trolley crowds were less genteel than preceding tourist parties of well-heeled visitors.⁵⁶ The trolley tourists were often not as reverential as the ladies' association would have liked, picnicking on the grounds, lolling about, and strewing trash on the lawns.⁵⁷

There was little the ladies could do about the situation, however. Visitation declined slightly after the banner year of 1893, but remained at double or triple the pre-electric railway rate until 1903, when the annual total broke the 100,000 mark thanks to the crowds assembled for Theodore Roosevelt's inauguration. The estate's hours were eventually extended to accommodate the railway company's expanded schedule, which had grown to 30 trains a day by 1906.⁵⁸ The old lunch room outside the north gate was greatly expanded at the turn of the century to accommodate the growing crowds. The Ladies' Association could do little to regulate the restaurant's activities on private property, however. When the federal government constructed MVMH in 1929-32, however, it insisted on maintaining control over the operations of the terminal concessionaires.⁵⁹

⁵⁴ Concern about the "threat" imposed by the electric railroad's proposed "encroachment" began appearing in the Minutes of the Mount Vernon Ladies' Association of the Union in 1885 and continued into the early years of the twentieth century. The attempt to buy the restaurant from Mr. Gibbs is reported in the minutes for 1892, 10. Jay Gould's purchase is described in Lord, Romantic Road to Mount Vernon, 149.

⁵⁵ Minutes of the Mount Vernon Ladies' Association of the Union, 1892: 10, 75-77, 90-91.

⁵⁶ "Visitation at Mount Vernon, 1858-1980," xeroxed tabulations, Mount Vernon Ladies' Association of the Union Library, Mount Vernon, Virginia. See Appendix XX for a complete list of these figures. Supervisor's Report printed in Minutes of the Mount Vernon Ladies' Association of the Union 1893: 26-27.

⁵⁷ Minutes of the Mount Vernon Ladies' Association of the Union 1893: 26-28.

⁵⁸ Minutes of the Mount Vernon Ladies' Association of the Union 1893: 54-55; "Visitation at Mount Vernon, 1858-1980,"; Netherton et al, Fairfax County, 479; Sprouse, "The Troublesome Road to Mount Vernon," 2.

⁵⁹ Minutes of the Mount Vernon Ladies' Association of the Union, 1910, 75.

THE ELECTRIC RAILWAY ERA

The history of the Washington, Alexandria and Mount Vernon Electric Railway exemplified a major phase in the evolution of American transportation, in which electric railways radically reshaped the American landscape (Figure 12). Like Mount Vernon Memorial Highway, the railway itself heralded as a notable engineering achievement by contemporary commentators. The first successful electric street railway began service in Richmond, Virginia in 1888. The fact that the Washington, Alexandria & Mount Vernon was chartered in 1890 and completed between Alexandria and Mount Vernon by 1892 demonstrates the rapidity with which new transportation technologies have been employed to provide access to Mount Vernon.⁶⁰

Like MVMH, the Washington, Alexandria & Mount Vernon Electric Railway was constructed on a "fast-track" schedule to reach Mount Vernon in time for a major national celebration. The nationwide reunion of the Grand Army of The Republic was scheduled to take place in Washington in September 1892 and was expected to draw tens of thousands of veterans. Construction began in late April 1892 under the direction of chief engineer B. P. Flint and construction supervisors A. S. Kibbe and Hubert Turner. The railway was completed between Alexandria and Mount Vernon on September 18. The first car arrived at Mount Vernon on September 20, 1892. In order to keep on schedule, the track between Hunting Creek and Mount Vernon was laid at what was considered a remarkable rate of one mile per day. The new Hunting Creek trestle was heralded as a major accomplishment. The old turnpike route was markedly shortened by erecting a 400' span that was supported by piles driven deep into the mud. Negotiations over the use of Long Bridge delayed completion of the connection between Alexandria and Washington for another four years. In the meantime, passengers from Washington took a short ferry ride to Alexandria. Beginning in 1896 the railway maintained two tracks between Washington and Alexandria, with frequent service in each direction. A single track stretched from Alexandria to Mount Vernon, where the trains looped around an elongated circle to reverse direction and return to town. The circuit from Washington to Mount Vernon took approximately one hour and the trains left at half-hour intervals. The line crossed the Potomac at Long Bridge and terminated at 13 1/2 and E streets. The Washington terminal moved to a new facility at 12th street and Pennsylvania Avenue in 1908. In addition to the Hunting Creek trestle and the rapid construction schedule, the railway's third noteworthy technical feature was a device that allowed the cars to switch automatically from overhead powerlines to an underground conduit as they crossed into Washington in order to conform to the city's ordinance prohibiting overhead wires. Trolley publications like the

⁶⁰ George W. Hilton and John F. Due, The Electric Interurban Railways in America (Stanford, California: Stanford University Press, 1960), 3-7; John Stilgoe, Metropolitan Corridor: Railroads and the American Scene (New Haven: Yale University Press, 1983).

Street Railway Journal reported primarily on the technical aspects of the railway, but also noted that the route offered "charming glimpses of the Potomac."⁶¹

The flexibility and affordability of the electric railway made it popular with local commuters and excursionists, as well as with Mount Vernon-bound tourists. This is another way in which the railway presaged the functions of GWMP. Local farmers used the railroad to bring milk and produce to Washington's Central Market. School children boarded the train on weekdays to attend classes in Alexandria or across the river in Washington (a common practice until the 1920s). A growing number of citizens took advantage of the railroad to live in the Virginia countryside and commute to work in Alexandria or Washington. Local ridership was also high on Sundays, even though Mount Vernon was closed and the trains went no further than Little Hunting Creek.⁶² There were a number of popular informal picnic grounds along the Potomac within easy reach of the railway. Collingwood Beach, near the site of the old Clifton's Neck ferry, was a popular picnicking destination that supposedly dated back to Colonial days. By the late-nineteenth century it had become a favorite location for Fourth of July celebrations and informal parties. Dyke Station was another popular departure point for picnickers, as was Riverside, the last stop before Mount Vernon.⁶³

The electric railway route, together with trolley tourist's ability to stop at multiple sites, generated accounts old homes, ruins, forts, and distant events that had inaccessible to steamboat passengers. Publications like William H. Snowden's Some Old Historic Landmarks of Virginia and Maryland, Described in A Hand-Book for the Tourist over the Washington, Alexandria and Mount Vernon Electric Railway described the trip from Mount Vernon and Alexandria in detail. Most guides emphasized Alexandria's many historical associations with the life of Washington. Snowden was typical in asserting, "There is more in Alexandria to call up the memory of Washington than in any other place in our country except Mount Vernon." This assertion became a constant refrain of memorial avenue promoters, who insisted the roadway pass through the town.⁶⁴

⁶¹ Mayme Parker "Alexandria's Heritage Includes Era of Electric Railway," Alexandria Gazette, 22 February 1955; "The Washington, Alexandria & Mt. Vernon Electric Railway," Street Railway Journal 9 (February 1893): 81-82; "The Washington, Alexandria & Mt. Vernon Electric Railway: Novel Devices for Automatic Changing from Underground to Overhead Trolley--A High Speed Road," Street Railway Review 6 (15 July 1896): 433-434.

⁶² Quoted in Parker, "Alexandria's Heritage Includes Era of Electric Railway," n.p.

⁶³ Parker, "Alexandria's Heritage Includes Era of Electric Railway"; Netherton et al, Fairfax County, 479; W. H. Snowden, Some Old Historic Landmarks of Virginia and Maryland, Described in a Hand-Book for The Tourist over the Washington, Alexandria, and Mount Vernon Electric Railway (Alexandria: G.H. Ramey & Sons, 1902), 26-30, 37-39.

⁶⁴ Snowden, Some Old Historic Landmarks, 12-23.

Soon after the Washington, Alexandria and Mount Vernon Electric Railway was chartered, a group of investors formed the New Alexandria Land and River Improvement Company to develop a 1,600-acre tract south of Great Hunting Creek near the site of the present Belle Haven Country Club. The company undertook an intensive but largely unsuccessful marketing campaign. The townsite was platted, a few minor factories established, and several houses were built, but the company went bankrupt and the development languished.⁶⁵ In 1906 Frederick Ingersoll of Pittsburgh built a miniature Coney Island between Washington and Alexandria, right next to the electric railway line just north of Four Mile Run. Luna Park cost \$350,000 to construct and included games and amusements. The amusement park contained a grand ball room, a restaurant, and picnic grounds capable of holding 3,000 people. Luna Park was eclipsed by the development of Glen Echo, which offered comparable amusements further up river in a cooler, more scenic locale. Luna Park was dismantled between 1912-1915. Some of its buildings were reportedly carried down the railway to Wellington and converted into vacation cottages. A more modest beach resort was located on the Virginia shore just north of the 14th Street Highway Bridge. The beach remained popular through the late 1920s, when it was eliminated by the construction of MVMH. A small marina on the south side of the bridge was also removed at this time. Arlington Springs was another popular pleasure ground that was eliminated by the federal government's redevelopment of the Virginia shore for parkway construction. It was located near the northern inlet to Boundary Channel, where a small stream running down from the Arlington estate entered the Potomac River. The Custis family were known to have entertained guests at an attractive spot on the Potomac when they occupied Arlington House in the early nineteenth century. By the 1820s, a kitchen, dining shelter, and dance pavilion had been erected on the river bank, and the public was allowed to use the site for picnics and gatherings. Mason's/Analostan Island was another popular place for boating, picnicking, athletic contests, and other popular amusements in the late nineteenth and early twentieth century. A number of boathouses were located along the Potomac shore in the vicinity of Aqueduct Bridge to cater to the popular mania for canoeing that raged in the early 1900s. These private facilities were removed during the creation of MVMH and its extension north of Columbia Island as GWMP.⁶⁶

Great Falls and Glen Echo were the primary electric railway destinations on the Potomac River north of Washington. Great Falls had long been a tourist magnet, drawing visitors to observe the natural splendor of the falls and marvel at the engineering accomplishments of Washington's Patowmack Canal. William Morrison's popular nineteenth-century guide book Stranger's Guide to Washington City advised, "If the visitor has the inclination to drive to the Great Falls of the Potomac, distant about fifteen miles from Georgetown, it will prove a delightful diversion." Morrison advised tourists to take a barge or steam packet up the C & O

⁶⁵ Netherton et al, Fairfax County, 477-79; Friis, Geographical Reconnaissance, 25.

⁶⁶ Netherton et al, Fairfax County, 479; Netherton and Netherton, Arlington County, 52, 134-141.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 37)

Canal for a fee of 50 cents. Joseph West Moore's 1888 Picturesque Washington: Pen and Pencil Sketches also recommended the trip to Great Falls, though it provided no suggestions on how to get there. Both guides recommended making the side trip to Cabin John Bridge, then famous as the largest single span masonry arch in the world.⁶⁷

The success of the Washington, Alexandria and Mount Vernon Electric Railway prompted a group of investors to form the Great Falls and Old Dominion Railway, which completed its line between Rosslyn and Great Falls on July 3, 1906. The railway carried 1.6 million passengers the following year. The Great Falls trolley line was targeted as a major tourist route (Figures 13-14), but it contributed greatly to the growth of the region through which it passed. Development in northeast Fairfax County had long been hampered by the county's poor road network. The road connections to the south were so bad that the Georgetown Pike on the Maryland side of the river still provided the main access to Washington for people living in Virginia near Chain Bridge. The Great Falls and Old Dominion electric railway headed inland from Rosslyn to avoid the steep gorges along the Potomac, but it still ran closer to the river than the old Leesburg Pike. The construction of this new rapid transit artery boosted the fortunes of small communities like McLean and Langley, initiating the suburbanization trend that would be greatly accelerated by the northern extension of GWMP in the 1950s-1960s.⁶⁸

Electric railways were also built on the Maryland side of the Potomac. In 1891 two real estate developers from Philadelphia donated 80 acres near Cabin John Creek to an organization known as the "National Chautauqua of Glen Echo," hoping this would encourage homesite purchases. The chautauqua scheme turned out to be a financial disaster, however, folding soon after it opened. In 1899 the property was leased to the Glen Echo Company, which transformed the site into an ordinary amusement park. The Washington Railway and Electric Company ran a streetcar track out from Washington and bought the amusement park company in 1911, keeping the Glen Echo name and adding a dance hall and roller coaster. The company added a Dentzel carousel, a bumper car pavilion, a swimming pool, a grand ballroom, and numerous smaller attractions. Glen Echo remained popular up through the 1940s. The park struggled on into the 1960s, but finally closed its doors in 1968. The trolley line itself ceased operation in 1960. The National Park Service acquired the amusement park and surrounding area in 1971. The Park Service renovated the carousel and currently

⁶⁷ Morrison, Stranger's Guide to Washington City, 58; Moore, Picturesque Washington, 271.

⁶⁸ Netherton et al, Fairfax County, 484-485.

maintains a variety of programs on the site ranging from art studios to folk dancing and children's theater.⁶⁹

During the 1920s the rise of automobile ownership began to erode the appeal and financial base of suburban electric railways. By the 1920s customers were complaining that the cars of the Mount Vernon line were deteriorating and that service in general was declining.⁷⁰ The Washington, Alexandria and Mount Vernon Railway combined with several other lines running out of Rosslyn and Alexandria in 1910 to form the Washington and Virginia Railway Company. This company controlled a large portion of the street railway system in Arlington and Fairfax County, but mounting losses forced the company to declare bankruptcy in 1924. The service to Mount Vernon was still seen as a potential profit-maker, so the Washington, Alexandria and Mount Vernon Electric Railway was reconstituted as a separate entity. The railway shifted its focus from individual tourists to organized groups, offering to provide guides and trained lecturers, orchestrate side trips, and deliver customers to and from their hotels. Nevertheless, the railway continued to lose money. The decision to build MVMH put the final nail in the railway's coffin. The streetcar made its last trip to Mount Vernon on February 28, 1930. Construction on MVMH was already underway by this time. The track was sold to Washington scrap iron dealer Louis Simon, who dismantled it prior to the highway's construction. The railroad's last run between Alexandria and Washington was on April 9, 1932. Parkway designers favored a more roundabout route than the electric railway offered, but MVMH utilized a few portions of the streetcar right-of-way between Washington and Alexandria. The parkway followed a long stretch of rail bed through the subdivision of Wellington, which had grown up on either side of the track, restricting the road builders' options. The railroad's Washington terminal facility was swallowed up in the creation of Federal Triangle. North of Washington, Fairfax County's notoriously poor road system provided less direct competition, enabling the Washington & Old Dominion Railway to keep its Great Falls trolley in service a few years longer, before closing the line in 1935.⁷¹

Few physical reminders of the electric railway era survive today. Some pilings from the Great Hunting Creek trestle can be seen to the west of the MVMH bridge. The long straight stretch of MVMH on either side of the Wellington overpass serves as the most prominent physical legacy of the old trolley route. On the Maryland side, several sections of the Glen Echo

⁶⁹ Gary Scott, "Glen Echo Amusement Park National Register of Historic Places Inventory Nomination Form," National Park Service, U.S. Department of the Interior, 1984.

⁷⁰ Netherton et al, Fairfax County, 523-24, 599-601.

⁷¹ Parker, "Alexandria's Heritage Includes Era of Electric Railway," n.p.; "Tourist Business Increased 20 per cent on Washington-Virginia Railway," Electric Railway Journal 66 (12 September 1925): 387; Hilton and Due, The Electric Urban Railways in America, 328-329; "Mt. Vernon Road to be Dismantled," Washington Evening Star, 23 January 1930; Netherton et al, Fairfax County, 523-24, 599-601.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 39)

electric railway bed can be found along Clara Barton Parkway. One of the old electric railway trestles survives in the woods on the north side of Clara Barton Parkway near the Sycamore Island footbridge.

THE MOUNT VERNON AVENUE ASSOCIATION

The probable originator of the Mount Vernon Avenue concept was M. B. Harlow, a local businessman who served as Alexandria city treasurer from 1876-1893. Harlow claimed that the idea for the avenue came to him in 1883 or 1884, when he was visited by many friends and relatives who wanted to make the Mount Vernon pilgrimage. Harlow claimed these requests prompted him to advocate the construction of "a magnificent boulevard from the city of Washington to the tomb of the founder at Mount Vernon."⁷² The proposed boulevard would serve as a tribute to Washington and satisfy the demands of the ever-increasing number of Mount Vernon-bound tourists (Figure 15). Harlow approached, E. W. Fox, editor of the Washington-based National Republican newspaper, for support. Fox began promoting the project through his newspaper in August 1887. The Alexandria Gazette also picked up the cause, printing reports of the organization's meetings and activities.

On August 5, 1887 Fox published an editorial asserting, "Immediate steps ought to be taken to make a splendid drive from the Virginia terminus of the Aqueduct bridge to Mount Vernon." Fox proclaimed, "A grand avenue, one hundred feet wide, properly graded, macadamized, and shaded, should cover the distance between the capital city of the nation and the tomb of its great founder." Fox presented the avenue primarily in terms of the financial benefits that would accrue to the region through which it passed. Fox asserted, "It would cause villas belonging to the wealthiest citizens of the nation to be built along and near the avenue. It would add vastly to the prosperity and wealth of Washington, and leading citizens of Washington should move in the matter at once." The National Republican boldly predicted, "The value of property would be increased, roads leading to the avenue would be improved and the farmers would have a first class method of reaching two good markets with all their produce."⁷³

A month later, both the National Republican and the Alexandria Gazette reported that an organizational meeting for Mount Vernon Avenue supporters would be held in Alexandria on September 15.⁷⁴ The mixture of patriotic and economic motivations was apparent in the

⁷² Harlow's reminiscences and remarks recorded in United States Congress, House Committee on Roads, Roads. Hearings before the Committee on Roads . . . on H.R. 524, 68th Cong., 1st Sess., 25 April 1924, 25. Harlow's interests were at least as much material as spiritual. He founded the Alexandria Real Estate Company in 1888, and also served as president of the Spring Bank Real Estate Company and the Rosslyn Development Company. ("M. B. Harlow Succumbs to Heart Attack, Alexandria Gazette undated obituary from 1931, in Mt. Vernon Memorial Highway folder, Mount Vernon Archives).

⁷³ "Mount Vernon Avenue," National Republican (Washington, D.C.), 5 August 1887.

⁷⁴ "Mount Vernon Avenue," National Republican (Washington, D.C.), 5 September, 1887; "Local News: Mt. Vernon Avenue," Alexandria Gazette, 14 September, 1887.

location announced for the avenue association's organizational meeting: the offices of the Alexandria Real Estate Investment, Trust, and Title Company, which was run by Harlow's friend and business partner Park Agnew. Agnew played a prominent role in the Mount Vernon Avenue Association, both as an advocate and as a member of the route location committee. So many businessmen, town officials, and property holders showed up for the avenue association's organizational meeting that it was moved to larger quarters at the Alexandria Opera House. A number of speeches were given and the group decided to elect officers and call itself the "Mount Vernon Avenue Association." Alexandria Mayor John B. Smoot was elected president, Harlow was appointed treasurer, and Fox offered to serve as corresponding secretary (Figure 16). Fox urged property owners to demonstrate their community spirit by offering to donate land for the right of way. Fox mixed patriotic exhortations with calculated appeals to the greed and vanity of his audience, asserting that later generations would revere contributors to the avenue for their selflessness in helping to "lay a broad foundation for what posterity will term a great and noble work."⁷⁵

A scouting party comprised of Mayor Smoot, his son J. C. Smoot, Park Agnew, Fox, several other local landowners, and three engineers hired by the association inspected the terrain between the Aqueduct Bridge and Alexandria in mid-October, but held off on approving a definitive route.⁷⁶ A second excursion was scheduled for mid-November to examine the countryside between Alexandria and Mount Vernon. Despite its obvious self-interest, the Mount Vernon Avenue Association's location committee seems genuinely to have been concerned with devising a route that would produce an agreeable combination of historic associations and scenic attractions. The October 17, 1887, National Republican reported that the Mount Vernon Avenue Association's location committee, together with "a large party of gentlemen interested in the project," had spent the previous Saturday examining the area from the Aqueduct Bridge to Alexandria. The location party mostly followed existing inland roadways, ascending to the tops of ridges for views of the surrounding country. After an enjoyable excursion in their carriages, the group proclaimed the inspection a success, asserting "a route of unequalled beauty could be located for the avenue to the tomb of Washington." The engineers hired by the group were instructed to prepare reports on three alternatives described as the "ridge" route, the "valley" route, and the "interior" route.⁷⁷

⁷⁵ "Mount Vernon Avenue: The Great Thoroughfare to the Tomb of Washington," National Republican (Washington, D.C.), 16 September 1887.

⁷⁶ "Mount Vernon Avenue: The Committee Examines a Portion of the Country," National Republican (Washington, D.C.) 17 October 1887.

⁷⁷ "Mount Vernon Avenue: The Committee Examines a Portion of the Country," National Republican (Washington, D.C.) 17 October 1887.

In mid-November the location committee made another excursion to inspect the terrain from Alexandria south to Mount Vernon. This group included Smoot, Fox, Agnew, Hume, W. H. Snowden, and C. W. Ridley of the U.S. Army Corps of Engineers. The group again followed the high ground, keeping to existing roads except where short detours provided outstanding vistas. The crest of the ridge about three miles south of Alexandria was one such point. The paper reported that when the committee reached this spot and looked back toward the Alexandria and Washington they "unanimously agreed that the view of the Potomac was one of the finest in the world." The committee suggested erecting an observatory just off the roadway so that both Mount Vernon and Washington could be seen at the same time. The party left the existing road and continued along the top of the ridge before dropping down to Washington's old River Farm, where they admired the view of Mount Vernon. The committee again refused to endorse a specific route. The National Republican reported, "It is enough to say now that the gentlemen of the party were greatly pleased with the general beauty of the country through which the road will pass, whatever its exact lines may be, and returned full of enthusiasm for the enterprise." The newspaper predicted that the location would be finalized within the next few weeks. The announced route was expected to follow existing roadways for the most part in order to speed up the construction process.⁷⁸

The prolonged uncertainty over the avenue's location stimulated considerable discussion in the local newspapers. Both papers rejected suggestions that the avenue pass behind Alexandria over Shooter's Hill. This would provide more expansive vistas, but the idea was unacceptable to Alexandria merchants and civic boosters because it would bypass the town's main street. The National Republican argued that Alexandria was "Washington's town," repeating the usual claim that the city offered nearly as much to the seeker of Washingtoniana as Mount Vernon itself (Figure 17). If the proposed avenue was supposed to honor Washington's memory and instruct future generations about American history, the newspaper contended, it should lead through historic downtown Alexandria.⁷⁹ The Alexandria Gazette betrayed the utilitarian motives of the avenue promoters, asserting that, while tourists would certainly make use of the boulevard, the main traffic would be everyday travel between Washington and Alexandria.⁸⁰ This tension between utility, patriotic associations, and park values would appear again and again throughout the parkway's history.

⁷⁸ "Mount Vernon Avenue: Ground For the Great Highway Examined From Alexandria," National Republican (Washington, D.C.), 17 November 1887.

⁷⁹ "Mount Vernon Avenue: Progress Made on the Grand National Highway," National Republican (Washington, D.C.), 1 December 1887.

⁸⁰ "It has been suggested that the proposed Mt. Vernon Avenue . . ." [editorial], Alexandria Gazette, 5 September 1887.

The official manifesto of the Mount Vernon Avenue Association, John Reavis's 1888 pamphlet Mt. Vernon Avenue: A National Memorial Highway from Washington to Mt. Vernon, commented on the local scenery as well as on the historic associations of the proposed routes.⁸¹ After leaving the government reservation and crossing Columbia Pike, the preferred route climbed the ridge above the site of Fort Albany. Opinions differed on whether it should then extend along the length of the ridge to take advantage of panoramic views (Figure 18), or drop down into the valley of Long Branch along an abandoned stretch of the Georgetown-Alexandria Road. Advocates of the latter route maintained the old road's historic stature as the route used by Washington, Braddock, Jefferson, and other notables mandated its inclusion. Opponents maintained that the views from the ridge were more important. The Mount Vernon Avenue Association eventually decided that the road should keep to the high ground.⁸² The two routes combined again in the valley of Four Mile Run, where they proceeded to the north end of Washington Street in Alexandria. Several railroads converged on Alexandria in this stretch, leading Reavis to complain that the approach to Alexandria was marred by "an annoying network of railroad tracks, making it impossible to drive in that way with any safety or pleasure." Keeping to the hills west of Alexandria would eliminate the worst of the railroad problem, but this alternative was unacceptable to the Alexandria boosters.⁸³ Reavis advised that the Memorial Avenue south of Alexandria should more or less follow the Accotink Turnpike to Gum Springs. While this was not the historic route used in Washington's time, it afforded better views. Reavis asserted that the panorama from the heights east of the roadway, where the location party had recommended raising an observation tower, was widely acknowledged to be "the most comprehensive, grandest view on the entire route from Washington to Mt. Vernon, and one of the most remarkable to be enjoyed on the American continent."⁸⁴

While this inland alignment would have produced a markedly different travel experience from the modern highway in itself, the difference between the Mount Vernon Avenue Association's plans for the avenue's embellishment and the informal landscape treatment adopted by the BPR in the 1920s was even more striking. Ordinary country lanes would have to be followed at first in order to get the project underway, but the avenue association envisioned an explicitly "monumental" landscape consisting of a grand formal boulevard lined by imposing statues and memorials honoring the nation's civic and military leaders (Figure 19). In order to transform

⁸¹ Reavis, Mt. Vernon Avenue: A National Memorial Highway from Washington to Mt. Vernon, 11-13.

⁸² "Mount Vernon Avenue: Progress Made on the Grand National Highway," National Republican (Washington, D.C.), 1 December 1887.

⁸³ Reavis, Mt. Vernon Avenue, 14-23; "The Home and Haunts of Washington," The Century Magazine 35 (November 1887), 3-22.

⁸⁴ Reavis, Mt. Vernon Avenue, 25.

the project into a national undertaking, every state and territory would be granted a quarter mile section of the boulevard to erect testimonials to its contributions to America's prowess. The original thirteen states would receive the positions nearest Mount Vernon. The remaining states would be strung out along the roadway according to the order of their admission to the union. Each state would erect bronze or marble tablets bearing its coat of arms and a list of native signers of the Declaration of Independence, along with statues of noteworthy citizens. The sections were to be adorned with trees and plants native to the individual states. All memorials and structures were to be made with native materials as far as was possible. Where the avenue crossed federal property in front of Arlington Cemetery, the government was supposed to provide the landscaping and erect statues of past presidents and vice-presidents.⁸⁵ The idea of apportioning segments of the roadway to the individual states was designed to both broaden the political base of the project and defray the cost of the contemplated improvements. Encouraging the states to invest their own money for the embellishment of the avenue shifted the burden away from local taxpayers and reduced the amount of federal funding, thus enhancing the chances of congressional approval. The patriotic nature of this proposed gallery of national heroes evoked numerous comparisons to England's Westminster Abbey, Rome's Appian Way, and the memorials of other great civilizations. Discussions of the avenue often referred to it as "The American Appian Way" or "The American Westminster Abbey," adding that the scale and grandeur of Mount Vernon Memorial Avenue would put these Old World monuments to shame. Association president Jeff Chandler insisted that the memorials would instruct travelers, instill patriotism, and help strengthen the union.⁸⁶ The National Republican proclaimed, "Every foot of the route will not only be historic, it will teach the history of the states, and the great men who helped make them."⁸⁷

Design proposals grew increasingly elaborate as time went by. Fox first suggested a 100' right-of-way, which would include a macadamized roadbed and bordering shade trees. He soon proposed broadening the avenue to 150', with 25'-wide landscaped strips on either side of a 100'-wide roadbed.⁸⁸ At the founding meeting of the Mount Vernon Avenue Association, Fox declared that 200' was the minimum requirement for a dignified avenue. This would provide room for an electric railway or horsecar line down the center of the boulevard, leaving space for either 60' of roadbed with 70' of grass and trees on either side, or 90' of roadway

⁸⁵ "Mount Vernon Avenue," National Republican (Washington, D.C.) 5 September, 1887; "A National Boulevard: Proposed 'Highway of History' from Washington to Mt. Vernon." Baltimore Sun, 27 November 1899.

⁸⁶ Reavis, Mt. Vernon Avenue, 9-10.

⁸⁷ "Mount Vernon Avenue," National Republican (Washington, D.C.), 5 September, 1887.

⁸⁸ "Mount Vernon Avenue," National Republican (Washington, D.C.), 5 September, 1887.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 45)

with 60' of park treatment on either side.⁸⁹ Despite objections that the proposal was getting out of hand, 200' became the statutory width of the proposed boulevard when the Mount Vernon Avenue Association was officially chartered in February 1888, though Harlow pushed for further expansion to 250'.

Harlow, Agnew, and other influential Alexandrians secured passage of a Virginia bill formally incorporating the Mount Vernon Avenue Association on February 18, 1888. The charter was officially presented to the association on March 8, 1888. The corporation was given authority to acquire a 200' wide right-of-way between the Aqueduct Bridge and Mount Vernon by means of condemnation, donation, or purchase. The association was required to discern "the most practicable route . . . conduct and keep in repair a public avenue and highway thereon, and to adorn and beautify the same." The location would be determined by the association's trustees at a later date, but the legislation stipulated that it would pass through Alexandria along Washington Street. An electric trolley line could be built along the avenue, as long as it was constructed and operated in a manner that would "not disturb the enjoyment of said Avenue by ordinary private vehicles and carriages and means of travel." The association was also given authority to police the avenue in conjunction with the jurisdictions in which it lay.⁹⁰

The Mount Vernon Avenue Association's efforts resulted in a \$10,000 congressional appropriation for a survey of potential routes for a national road connecting Washington and Mount Vernon via the Aqueduct Bridge. This legislation was approved on February 23, 1889, with the stipulation that the survey should not be construed as a commitment to expend any further federal funds.⁹¹ The job of surveying the road was assigned to Lt. Col. Peter C. Hains of the U.S. Army Corps of Engineers. His report was transmitted to Congress on January 4, 1890. Hains was as enthusiastic as the local boosters when it came to promoting the scale, character, and patriotic value of the proposed highway. He asserted that the road's purpose was "to commemorate the virtues of the grandest character in American history." Like other early avenue promoters, Hains emphasized the memorial highway's inspirational function, proclaiming, "Whatever tends to keep alive the memory of his character and virtues will tend to make us all better citizens of the Republic."⁹² Hains said that the road should "have the character of a monumental structure, such as would comport with the dignity of this great

⁸⁹ "Mount Vernon Avenue: The Great Thoroughfare to the Tomb of Washington," National Republican (Washington, D.C.), 16 September 1887.

⁹⁰ Reavis, Mte. Vernon Avenue, 4-9.

⁹¹ The Act of Congress authorizing this survey was reproduced in United States Congress, House, Executive Doc. No. 106, National Road from the Aqueduct Bridge to Mount Vernon, Va., report prepared by Lt. Col. Peter C. Hains, U.S. Army Corps of Engineers, 51st Cong., 1st sess., 1890, 1-2.

⁹² Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 2-3.

nation in such and undertaking, and the grandeur of the character of the man to whom it is dedicated." He directed that it should be laid out with easy grades and that the road surface be well-paved and well-maintained. Strips of trees and grass would form "an essential feature" of the design. The alignment would trace "graceful curves," link sites associated with Washington's life, and traverse elevations "from which the beautiful scenery along the route could be enjoyed."⁹³

Hains's surveyors examined three separate routes: the eastern or river route, the middle route, and the western route (Figure 20). These were described in detail and delineated on the map that accompanied the congressional report. Several intermediate connections were also portrayed so that combinations of the three main routes could be visualized. All routes began at the Aqueduct Bridge, though Hains suggested that the highway should begin at the Virginia terminus of the proposed Memorial Bridge.⁹⁴ The river route followed the abandoned bed of the Alexandria and Georgetown Canal to Alexandria, passing through the city on Washington Street. Crossing Great Hunting Creek on a new monumental bridge to be located east of the existing Accotink Turnpike bridge, the river route went along the base of the hills east of the existing turnpike. Avoiding the marshy terrain adjoining Hog Island, it turned sharply inland to cross Little Hunting Creek about a mile east of Gum Springs, then turned south again to Mt. Vernon. The advantage of this route was that it avoided most of the expenses of grading by following generally low-level terrain. It also offered the least interesting views of the three routes. Drainage was also a potential problem in some areas, though the route was located far enough from the Potomac to avoid the extensive wetlands crossed by the massive hydraulic filling operations associated with the construction of MVMH. The river route contained two unavoidable at-grade railroad crossings. Another shortcoming was that the old canal bed was considered unnecessarily circuitous because the canal engineers had wound around even the slightest elevations to avoid expensive lock construction. On the plus side, this was the only one of the three routes that could be conveniently reached from Long Bridge. Though the river route was the least favored option at the turn of the century, it was closest to the alignment eventually taken by MVMH.⁹⁵

The middle path generally followed the route advocated by the Mount Vernon Avenue Association, with the exception that it passed west of Shuter's Hill, completely bypassing Alexandria. Because it offered the best views and the most numerous historical associations, the middle route remained the preferred alignment of avenue advocates until the BPR took over the project in the mid 1920s. Beginning at the Aqueduct Bridge, the middle route followed the

⁹³ Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 3.

⁹⁴ Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 2-4.

⁹⁵ Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 5-6.

old Georgetown and Alexandria Road through Arlington Cemetery and across the Columbia Turnpike. It stayed along the top of the next ridge before dropping straight into the valley of Four Mile Run, where it would cross over the Washington & Ohio Railroad on a double-arched masonry bridge. The road then skirted Braddock's Heights, crossed the railroad lines in the valley of Great Hunting Creek on a second masonry bridge, and swung east to follow Accotink Turnpike as far as Gum Springs. From Gum Springs it paralleled the shorter, east route to Mount Vernon. While the middle route wound up and down between the creek valleys and hills, the engineers maintained that judicious alignment could keep the grades from exceeding 3 per cent, except for the drop into the valley of Four Mile Run, where the grade approached the design limit of 4.5 per cent. The alignment would generally be in easy curves, with the exception of several segments between Four Mile Run and Great Hunting Creek, where deep gullies in the hillsides required a more circuitous route.⁹⁶

The western route followed a small stream valley from the Aqueduct Bridge up to Fort Myer. Passing behind Arlington Cemetery, it crossed rolling terrain on the west side of the major elevations between Fort Myer and Mount Vernon, rising to gain views of the Potomac valley near the prospect known as City View, then proceeding in a nearly straight line to Mount Vernon. As with the middle route, the railway lines through the stream valleys would be crossed with attractive stone bridges. This route involved the steepest and most extensive grades, while offering the fewest views of the Potomac River and straying furthest from downtown Alexandria. Its main attraction was that it was almost a mile shorter than either of the other routes, making it cheaper to acquire and construct, and providing a quicker round trip journey to Mount Vernon from Aqueduct Bridge. Shifting the highway's northern terminus to the proposed Memorial Bridge would make this route less desirable, since traffic would have to proceed up river to reach Fort Myer and then double back toward Mount Vernon.⁹⁷

The basic road design would be the same for all three routes. Hains presented estimates for two different treatments (Figure 21). Both called for a 250' right of way, but the width of the improved road bed was 120' in the most elaborate proposal and 80' in a less expensive option. The 120' design consisted of a 60'-wide paved driving surface flanked by double rows of trees in 30'-wide park strips, each of which would contain a bridle path or pedestrian walkway. The less expensive treatment would have a 50'-wide driveway bordered by 15' park strips. The bridges would be 60'-wide in either case. Hains maintained that iron or steel truss bridges were not appropriate given the monumental character of the avenue. He insisted that elegant masonry bridges should be constructed instead. He recommended the Telford pavement method as smooth, durable, and comfortable for both horses and riders. As described by

⁹⁶ Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 6.

⁹⁷ Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 6.

Hains, the Telford pavement consisted of an 8" base course of carefully laid large stones, covered with a 6" layer of small stones and topped with a 4" application of screened gravel. The gravel would be applied in layers and rolled repeatedly to bind the pavement together. Hains called for paved gutters on both sides of the driving surface, with frequently spaced drain pipes and culverts to carry away surface run-off. If these recommendations had been followed, Mount Vernon Memorial Avenue would have been one of the most expensive and elaborately constructed roads in the world. Hains also provided estimates for a simple 15" deep gravel treatment without the Telford base, which, though not as durable, would be much cheaper to construct. He reported that good gravel, cobble stones, and bricks were available locally. While Hains advocated the wider, well-paved roadway, he advised that the more economical approaches could be employed as temporary expedients as long as the 250' wide right-of-way was adopted to provide room for later expansion and improvements.⁹⁸

Hains's report contained detailed cost estimates for the three main routes and various combinations. It was accompanied by profiles of the surveyed terrain, a topographic map with the routes outlined, sketches of the proposed bridge elevations (Figure 22), and cross-sections of the two basic avenue configurations. The estimates were further broken down to compare the 80'-wide and 120'-wide alternatives and the two paving options. The projected costs for similar treatments were relatively close, with the eastern or river route consistently the most expensive and the shorter western route the cheapest. The least expensive alternative was the western route with the narrow roadway and gravel surface, at \$930,000. The most expensive was the eastern route with the grander 120'-wide boulevard and Telford pavement, at \$1,819,869. The cost of constructing a simpler gravel roadway along the river route was estimated at \$1,107,481 for the 80'-wide treatment and \$1,371,884 for the broader right-of-way. For all options, costs of the middle route generally ran about \$100,000 cheaper than the river route.⁹⁹ Hains's report was meant to provide detailed information on the various options, and he declined to endorse any specific route or landscape treatment. Despite the government's refusal to commit funds to the project, the report provided a boost to the avenue association's spirits and served as the primary point of reference for subsequent governmental efforts to build the highway.

Just as the Mount Vernon Avenue movement seemed to be gathering momentum, the construction of the Washington, Alexandria, and Mount Vernon Electric Railway dampened enthusiasm for the project. Discussions of the proposed avenue had raised the possibility of including an electric trolley line within the landscaped right-of-way, but the assumption was that the electric railway would complement the carriageway, not supplant it. The rapid loss of interest in the avenue project after the trolley plans were announced suggests that the Mount

⁹⁸ Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 4-5.

⁹⁹ Hains, National Road from the Aqueduct Bridge to Mount Vernon, Va., 7.

Vernon Avenue Association was more concerned with boosting local commerce and real estate values by improving transportation between Washington and Alexandria than with honoring George Washington. Tourist traffic to Mount Vernon more than doubled during the 1890s, rising from 31,964 visitors in 1890 to 69,446 visitors in 1899. While some tourists still traveled by steamboat, most took the electric railway. Though the route between Washington and Alexandria went through the wasteland of brickyards, railroads, and race tracks, suburban commuters and other local riders made this stretch even more popular than the southern section between Alexandria and Mount Vernon.¹⁰⁰

Following the construction of the electric railway, the Mount Vernon Avenue Association retained a low profile until 1899, when a competition for the memorial bridge between Washington and Arlington Cemetery revived interest in the project. The avenue association renewed its charter effective February 22, 1900, adding several amendments calculated to raise the project's profile and broaden its appeal. The association was empowered to convey all its rights, powers and property to the federal government, should the government decide to assume responsibility for the avenue. This was seen as a legal maneuver for encouraging federal support for the project.¹⁰¹ Another decade passed without significant action on the avenue project, however. The Mount Vernon Avenue Association's next (and last) major effort was spearheaded by an illustrated booklet prepared by Corresponding Secretary A. J. Wedderburn in 1913 (Figure 23). The major innovation of this report was a proposal to allow each state to construct a building along the avenue "for the purpose of advertising its educational, commercial, mining, manufacturing, and agricultural advantages." Wedderburn noted that these buildings could also function as meeting places for visitors to the capital, and provide conference rooms for businessmen and state representatives to promote their enterprises to potential investors. The states might also erect large maps of their territory in front of the pavilions for examination by potential investors.¹⁰² By this time, the avenue association supported Hains's middle route, even though it bypassed downtown Alexandria (Figure 24). Since the electric railway carried the majority of tourists through the city, the avenue promoters probably decided the avenue would not pose a threat to local commerce. The Daughters of the American Revolution (DAR) became involved in the project in 1910, asserting, "This Memorial Highway has first claim upon all thoughtful people, as it would assist in educating our children and the foreign population in patriotism by leading them to the

¹⁰⁰ "Visitation at Mount Vernon, 1858-1980," Mount Vernon Ladies Association of the Union Archives, Mount Vernon, Virginia.

¹⁰¹ "An Act to Amend and Re-enact an Act Entitled to Incorporate the Mount Vernon Avenue Association," Virginia Acts of Assembly, Chapter 498, 1899-1900, pp. 532-534, reprinted in Wedderburn, Mt. Vernon Avenue, n.p.

¹⁰² A.J. Wedderburn, Mt. Vernon Avenue (Washington, D.C.: The Art Publishing Company, 1913), n.p.

grave and modest home of our greatest of great presidents." The DAR put pressure on congress to build both the memorial bridge and the memorial avenue. In addition to lobbying for the avenue project, the DAR expressed a desire to "secure the privilege of beautifying and embellishing the road when constructed."¹⁰³

While the Mount Vernon Avenue Association continued to emphasize the route's patriotic aspects, the 1901 Senate Park Commission introduced a new focus that would eventually dominate efforts to create the memorial highway in the 1920s-1930s. The Senate Park Commission, also known as the McMillan Commission after the senator from Michigan who created it as chairman of the Senate Committee on the District of Columbia, was charged with devising a plan for the improvement of parks and public buildings in Washington. The commission was comprised of architect and city planner Daniel Burnham, sculptor Augustus Saint-Gaudens, architect Charles McKim, and landscape architect Frederick Law Olmsted, Jr. While the commission focused on the Mall and surrounding area, the report discussed parkway development and briefly touched on the extension of the park system along both sides of the Potomac River.¹⁰⁴ The commission viewed the avenue as an extension of the park system of the District of Columbia (Figure 25).¹⁰⁵ While the report acknowledged the avenue's "sentimental value as linking the nation's capital with the home of its founder," the commission observed, "If it were desirable merely on account of the historic associations with Mount Vernon we might hesitate to refer to it in this connection, but as a matter of fact it would present such a series of beautiful views of the broad portion of the Potomac Valley as would give it a priceless recreative value for the future population of the District."¹⁰⁶ The commission endorsed a slight variation of Hains's middle route, asserting it had potential to become "the most refreshing and delightful drive to be had in any direction from Washington, and not to be equaled at any great capital in the world." The commission recommended that a wide right-of-way be secured at the most scenic sections, even if this meant expanding the boundaries of the parkway to encompass large tracts on the lower slopes of prominent hill tops. The report noted that the rapid rise in real estate prices since Hains's estimates made it imperative for the government to begin acquiring land at once. While the commission

¹⁰³ The Daughters of the American Revolution statements appear in Wedderburn, Mt. Vernon Avenue, n.p.

¹⁰⁴ United States Congress, Senate Committee on the District of Columbia, The Improvement of the Park System of the District of Columbia, 57th Cong., 1st Sess. (Washington: Government Printing Office, 1902).

¹⁰⁵ The Senate Park Commission and other parkway advocates were not naive, of course. They presented detailed arguments for the fiscal soundness of their proposals and called attention to the demonstrated ability of park improvements to boost real estate values. While these fiscal justifications undoubtedly helped ensure passage of park legislation, appeals to speculative greed did not assume the central position in most parkway advocacy rhetoric that they did in the Mount Vernon Avenue Association's efforts.

¹⁰⁶ The Improvement of the Park System of the District of Columbia, 121.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 51)

commission declined to provide design details for the proposed roadway, the sections it presented for the various parkways and boulevards to be developed within the District of Columbia proper displayed a mixture of formal and informal elements (Figure 26).¹⁰⁷

The commission suggested that a formal circle or plaza be constructed at the base of the hill at Arlington Cemetery as a fitting connection between the Mount Vernon road and the monumental axis extending from the Lincoln Memorial to Arlington cemetery (Figure 27). The report observed that the road's southern terminus at Mount Vernon present the most difficult design problem. The main challenge lay in constructing a suitably dignified terminus that would not clash with the simple surroundings of Mount Vernon. The commission's report warned that a grand monumental terminus at Mount Vernon would intrude "a discordant public note into that place which should speak not of the statesman, but of the private gentleman of Virginia who there made his home."¹⁰⁸

The Mount Vernon Avenue Association dissolved by the 1920s, and the BPR rebuffed adherents of the original design when it was granted responsibility for the project. Despite its failure to transform its proposal from idea to reality, the avenue association articulated the concept of a national memorial road between Washington and Mount Vernon and prepared the way for the project's completion in the mid twentieth century. While changing tastes and new practical requirements eliminated the original alignment and resulted in a different landscape treatment, the early emphasis on history and commemoration was not entirely abandoned. The current parkway is not lined with statues in the manner envisioned by early memorial avenue promoters, but the parkway contains a significant assemblage of monuments, statues, memorials, and commemorative landscapes that distinguishes it from any American parkway constructed before or since.

¹⁰⁷ The Improvement of the Park System of the District of Columbia, 121-22; Olmsted's inspection tour reported in National Commission of Fine Arts, National Commission of Fine Arts Eleventh Report, January 1, 1926-June 30, 1929 (Washington, D.C.: Government Printing Office, 1930), 115.

¹⁰⁸ The Improvement of the Park System of the District of Columbia, 121-22; Karal Ann Marling discusses the changing image of Washington in George Washington Slept Here: Colonial Revivals and American Culture, 1876-1986 (Cambridge: Harvard University Press, 1988).

PARKWAYSParkway Precedents

When Congress authorized construction of the Mount Vernon Memorial Highway in 1928 the form and function of the modern motor parkway were just becoming standardized. Nineteenth-century parkways were attractively landscaped carriage drives connecting city centers with suburban parks and residential areas. The boulevards of fashionable new residential districts in cities like Boston, Cleveland, Richmond, and Chicago were modeled on European prototypes (Figures 28-29).¹⁰⁹ Berlin's Unter den Linden, Vienna's Ringstrasse, and Haussmann's Parisian avenues provided models for the sophisticated sought by American civic leaders and real estate developers (Figures 30-31).¹¹⁰ The terms "boulevard," "avenue," and "parkway" were used more or less interchangeably in the late nineteenth century to describe broad, tree-lined streets linking civic centers with affluent residential areas and major parks.¹¹¹ These formal boulevards consisted of one or more traffic lanes bordered with grassy pedestrian promenades and straight rows of evenly spaced trees. Some consisted of a central roadway for through traffic lined by smaller lanes to provide access to bordering residences. Frederick Law Olmsted, Sr., and his partner Calvert Vaux are credited with introducing the term parkway to refer to tree-lined boulevards intended primarily for pleasure traffic. In their 1868 proposal for Brooklyn's Prospect Park, they advised connecting the park with other sections of the city through "a series of ways designed with express reference to the pleasure with which they may be used for walking, riding, and driving carriages; for rest, recreation, refreshment, and social intercourse."¹¹² The design of these "park-ways" reflected the influence of Parisian

¹⁰⁹ Spiro Kostof, The City Shaped: Urban Patterns and Meaning Through History (Boston: Little, Brown, & Company, 1991), 212-40; Kostof, The City Assembled: The Elements of Urban Form Through History (Boston: Little, Brown, & Company, 1992), 105-106; John Reys, The Making of Urban America: A History of City Planning in the United States (Princeton, N.J.: 1965); Carl Condit, American Building Art: The Twentieth Century (New York: Oxford University Press, 1961), 277.

¹¹⁰ Adolphe Alphand, Les Promenades de Paris (Paris: J. Rothschild, 1867-73 [Reprint edition, Princeton, N.J.: Princeton Architectural Press, 1984]); W. Robinson, The Parks, Promenades & Gardens of Paris (London: John Murray, 1869); Sylvester Baxter, "Parkways and Boulevards in American Cities, I," The American Architect and Building News 62 (October 8, 1898), 11-12.

¹¹¹ For a contemporary review of parkway history, see John C. Olmsted, "Classes of Parkway," Landscape Architecture 6 (October 1915): 38-48.

¹¹² Olmsted, Vaux and Company, "Report of the Landscape Architects and Superintendents to the President of the Board of Commissioners of Prospect Park, Brooklyn, 1868," quoted in David Schuyler, The New Urban Landscape: The Redefinition of City Form in Nineteenth-Century America (Baltimore: Johns Hopkins University Press, 1986), 128.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 53)

boulevards, which Olmsted had examined in 1859.¹¹³ Olmsted and Vaux promoted their "parkways" as key elements of an inter-connected citywide park system. They claimed that connecting Central and Prospect parks via attractive boulevards "would enable a carriage to be driven on the half of a summer's day, through the most interesting parts both of the city of Brooklyn and New York, through their most attractive and characteristic suburbs, and through their great parks." Olmsted and Vaux also contended that the parkways would provide convenient traffic arteries, raise local real estate values, and serve as fire breaks to prevent the major fires that still threatened American cities.¹¹⁴

Though called parkways, the proposed Brooklyn parkways were not much different from traditional urban boulevards (Figure 32). Olmsted and Vaux's Brooklyn plan called for two 260'-wide approaches to Prospect Park, designated Ocean Parkway and Jamaica Parkway (soon renamed "Eastern Parkway"). They consisted of a central roadway flanked by three rows of evenly spaced trees. The center lane was reserved for pleasure vehicles. It was flanked on either side by grass strips, pedestrian walkways, and subsidiary roads for commercial traffic and access to bordering residences. While the Brooklyn plans received considerable publicity, economic problems associated with the Panic of 1873 delayed completion of Prospect Park and its parkways for over a decade.¹¹⁵

While Olmsted and Vaux were working on Prospect Park and its connections, Horace Cleveland was developing a unified park system plan for Chicago. Cleveland's 1869 plan called for two major parks connected by a broad straight boulevard that would also serve as an arboretum displaying as many trees as could be grown in Chicago's harsh climate. The great fire of 1871 put Cleveland's plans on hold. Olmsted incorporated Cleveland's basic ideas in his later plan for Chicago, though he rejected the arboretum as impractical and artificial, and made several other changes to accommodate the World's Columbian Exposition. Olmsted and

¹¹³ Mariana Griswold van Rensselaer, "Frederick Law Olmsted," Century Illustrated Magazine 46 (October 1893), 863; Laura Wood Roper, FLO: A Biography of Frederick Law Olmsted (Baltimore: Johns Hopkins University Press, 1983 [1973]), 147.

¹¹⁴ Olmsted, Vaux, and Company, "Preliminary Report to the Commissioners for Laying Out a Park in Brooklyn, New York, 1866," quoted in Schuyler, The New Urban Landscape, 127; "Preliminary Report to the Commissioners for Laying Out a Park in Brooklyn, New York: Being a Consideration of Circumstances of Site and Other Conditions Affecting the Design of Public Grounds, (1866)" in Landscape into Cityscape: Frederick Law Olmsted's Plans for a Greater New York City, edited with an introductory essay and notes by Albert Fein (Ithaca, New York: Cornell University Press, 1967), 126-27; "Report of the Landscape Architects and Superintendents to the President of the Board of Commissioners of Prospect Park, Brooklyn (1868)," in Fein, Landscape into Cityscape, 158-59.

¹¹⁵ Schuyler, The New Urban Landscape, 127-28; Brooklyn, New York, Commissioners of Prospect Park, Eighth Annual Report of the Board of Commissioners of Prospect Park, Brooklyn, January 1868 (Brooklyn: I. Van Anden's Print, 1868).

Vaux also designed a park system for Buffalo that included several connecting parkways, whose broadly curving forms suggested the serpentine routes of later motor parkways (Figure 33).¹¹⁶

The Metropolitan Park System that Olmsted and his protege, Charles Eliot, developed for Boston in the 1880 and 1890s was even more suggestive of the picturesque landscapes of the first motor parkways (Figure 34). Olmsted's plan for Boston called for a carriage drive and pedestrian promenade linking the centrally located Common and Public Garden with the large suburban park proposed for West Roxbury. While the initial segment made use of the formal boulevard of Commonwealth Avenue, the remainder of the drive followed the winding banks of the Muddy River to its source in Jamaica Pond, entering Franklin Park via a short curvilinear drive. Olmsted initially referred to this winding connection of walkways, bridle paths, and carriage drives as "The Promenade." The park commissioners termed it the "The Parkway" in their 1887 annual report, differentiating it into subsidiary sections called "Charlesgate," "Fenway," and "Riverway."¹¹⁷ The series of drives and bordering parkland that resulted from Olmsted's 1880 Boston plan, "Suggestion for the Improvement of Muddy River and for the Completion of a Continuous Promenade from the Common to Jamaica Pond" and his 1879 plan for the Back Bay Fens, played a major role in redefining the basic conception of the parkway from an urban avenue lined by regular rows of trees to a linear park containing a road as its principal design feature (Figure 35). While residential developments generally bordered one side of the Boston parkways, the user looked out on an informal linear park of varying width (Figures 36-37). Olmsted believed that curving drives bordered by asymmetrical naturalistic plantings and irregular topography provided a therapeutic escape from the harsh geometries and hectic pace of the urban environment. Gracefully winding parkways, he claimed, would "suggest and imply leisure, contemplativeness and happy tranquility" as opposed to "the ordinary directness of line of town streets."¹¹⁸ In terms of traffic circulation, the Muddy River project represented a middle-stage in the development from the traditional boulevard to the modern, limited-access parkway. Park development along the Muddy River reduced the number of entrances and cross-streets on the streamside of

¹¹⁶ Schuyler, The New Urban Landscape, 132-38; Francis Kowski, ed., The Best Planned City: The Olmsted Legacy in Buffalo (Buffalo, N.Y.: Burchfield Art Center, 1991); Buffalo, New York, City of Buffalo Park Commission, The Projected Park and Parkways on the South Side of Buffalo/Two Reports by the Landscape Architects, 1888 (Buffalo: City of Buffalo Park Commission, 1888).

¹¹⁷ Boston Park Commissioners, Annual Report, 1887, 22, quoted in Norman Newton, Design on the Land: The Development of Landscape Architecture (Cambridge: Harvard University Press, 1971), 300; see also Cynthia Zaitzevsky, Frederick Law Olmsted and the Boston Park System (Cambridge: Harvard University Press, 1982).

¹¹⁸ Olmsted, Vaux, and Co., Preliminary Report Upon the Proposed Suburban Village at Riverside, Near Chicago (NY: Sutton, Brown, & Co., 1868), in S. B. Sutton, Civilizing American Cities: A Selection of Frederick Law Olmsted's Writings on City Landscapes (Cambridge: MIT Press, 1971), 14.

the main driveways, but the city-side continued to allow access from adjacent property and side streets in the manner of contemporary boulevards. Olmsted's failure to provide grade separations at major intersections further reduced the parkway's ability to serve as a free-flowing traffic artery, a problem that became increasingly apparent with the growth in automobile traffic during the 1910s and 1920s.

The Machine in the Garden

Nationwide auto registrations exploded from 8,000 in 1900 to 458,377 in 1910 and over 8 million by 1920. The number of registrations surpassed 22 million by 1930.¹¹⁹ Automobile ownership in the District of Columbia mirrored nationwide growth patterns, increasing more than 100 per cent between 1920 and 1924, and doubling again by the mid 1930s.¹²⁰

Automobile ownership in Fairfax County grew at an even faster rate, rising from approximately 200 in 1915 to 2,775 in 1923.¹²¹ The effects of this growth in automobile ownership were soon noticed in parks and parkways on the local, state, and national levels. Urban park roads and metropolitan parkways soon became crowded with automobiles (Figures 38-39). National parks also experienced dramatic increases in automobile visitation during the 1910s-1920s. When the initial ban on automobiles was lifted, the number of motorists entering Yellowstone Park climbed from 51,895 in 1915 (the first year cars were allowed in the park) to 79,777 in 1919 and 138,342 in 1923. Similar increases occurred in other western national parks (Figures 40-41), prompting a concerted campaign of road-building and campground construction within the parks, along with broader efforts to promote a National Park-to-Park Highway.¹²²

The rapid rise of automobile ownership introduced new problems for parkway designers. As late as 1915, landscape architects still considered it necessary to include gravel or macadam

¹¹⁹ John Rae, The Road and the Car in American Life (Cambridge: MIT Press, 1971), 50, 57.

¹²⁰ District of Columbia Department of Highways, "Twenty-four years of Progress in Highway Development, 1924-1948" (Department of Highways, Washington D.C., 1948), 39-47.

¹²¹ Netherton et al, Fairfax County, Virginia: A History (Fairfax, Virginia: Fairfax County Board of Supervisors, 1978), 528.

¹²² Hiram Chittenden, The Yellowstone National Park, revised edition, (Saint Paul, Minnesota: J. E. Haynes: 1924), 249; A. E. Demaray, "Motoring Along the National Park Circuit," American Motorist (March 1924), 5-7, 40; L. I. Hewes, "America's Park Highways," Civil Engineering 2 (September 1932), 537-40; Ray Wilbur, "Roads in Their Relationship to a National and State Park System," American Highways (January 1933), 8-9; Linda Flint McClelland, Presenting Nature: The Historic Landscape Design of the National Park Service, 1916-1942 (Washington, D.C.: Interagency Resources Division, National Register of Historical Places, National Park Service, U.S. Department of the Interior, 1993), 102-36.

roadbeds for horses in their parkway designs.¹²³ With a few notable exceptions, such as John D. Rockefeller, Jr.'s carriage road system on Maine's Mount Desert Island, however, by the 1920s the automobile had become the vehicle of standard for parkway design. In a 1922 article in Landscape Architecture, "The Influence of the Automobile on the Design of Park Roads," Charles Eliot II declared a new era in parkway design. "The passing of the horse-drawn vehicle and the constantly increasing use of automobiles," he wrote, "have made necessary a revaluation of the various factors in the design of park roads."¹²⁴ The growing recreational use of automobiles transformed American's attitudes toward parks and parkways. As Eliot pointed out, motoring decreased the perceived size of urban parks by allowing people to drive through them at speeds that revealed their limited extent and counteracted the feeling of spaciousness earlier park designers had cultivated through the orchestration of expansive vistas such as Prospect Park's Long Meadow. Furthermore, the meandering carriage roads seemed excessively circuitous and perhaps even dangerous when experienced by automobile. Eliot felt that urban park roads should be reserved for pedestrians and equestrians. Motorists needed a new type of landscape suited to the distinctive requirements of the automobiles (Figure 42).¹²⁵

Eliot contended that the speed of the automobile demanded a rethinking of parkway aesthetics. Because of the higher traveling speeds, modern parkway designer needed to create broader and simpler compositions. Eliot asserted:

The automobile has . . . made necessary a broader treatment of views. Intimate and confined views cannot be appreciated from a fast moving vehicle; simplicity and breadth are required. Different views must not follow too closely upon one another, and the openings and vistas through bordering woods or shrubbery must be of far greater width. Every accent of the prospect and planting must be stronger because of the brief time in which it is seen¹²⁶

Eliot maintained that the automobile changed the focal point of parkway design, insisting that "The view ahead of the automobile, down the road, has become of greater relative importance." According to Eliot, the motorist's forward orientation meant that "The road vista, the sinuosity of curves, and the enframement of the view with suitable planting call for

¹²³ John C. Olmsted, "Classes of Parkways," 37-48.

¹²⁴ Charles Eliot II, "The Influence of the Automobile on the Design of Park Roads," Landscape Architecture 13 (October 1922), 27. See also Arthur A. Shurtleff, "The Effect of the Automobile on the Design of Parks," Landscape Architecture 11 (April 1921), 111-14.

¹²⁵ Eliot, "The Influence of the Automobile on the Design of Park Roads," 28-33.

¹²⁶ Eliot, "The Influence of the Automobile on the Design of Park Roads," 32.

more careful design than was given in other days."¹²⁷ Previously, the pedestrian or carriage driver moved at such a slow pace that little attention had to be paid to the forward view. Landscape architects could concentrate on lateral views that only marginally included the road itself. Eliot listed several specific changes in parkway design called for by the switch to automobiles. Designers of motor parkways needed to minimize sharp curves and steep grades. They should eliminate avoid blind corners and intersections, and separate cross traffic with bridges or overpasses whenever possible, following the example of Central Park. Unfortunately, the increased speed of automobile traffic required greater manipulation of the existing topography in the form of extensive cutting and filling. Eliot suggested separating parkways into independent one-way lanes to reduce the need for unsightly and expensive excavation. On the positive side, he observed that the automobile gave parkway designers more freedom to seek out attractive scenery. The speed of the automobile meant that designers no longer had to be so concerned with following the straightest line between two points. Unlike formal avenues and traditional highways and turnpikes, the parkway could "properly be quite indirect if by so locating it a pleasanter route is followed."¹²⁸

Frederick Law Olmsted, Jr., also wrote about the automobile's effects on scenic road design. Olmsted played an active role in parkway development in many cities. He clearly embraced the idea of motoring in parks, repeatedly asserting that value of facilities designed expressly for "pleasure riding by automobile."¹²⁹ In 1928 he published a series of recommendations for scenic motor road design. Like Eliot, he emphasized that the speed of modern automobiles made it necessary to design in a broader and simpler manner. Olmsted maintained that modern parkway designers should emphasize scenery that could be enjoyed from a moving vehicle.¹³⁰ Olmsted contended that the value of such landscapes should not be entirely dismissed, because "many of the elements of a beautiful kind of scenery are recognized as they flash by and one has a general stimulating sense of passing through pleasant places."¹³¹ Olmsted expressed a similar sensitivity to the concerns of motorists when John D. Rockefeller, Jr. solicited his advice for the design of motor roads in Acadia National Park. The Rockefellers and other wealthy, carriage-owning summer residents had kept Mount Desert Island free of automobiles until 1915, but by the late-1920s, it was no longer possible to bar the automobile-owning public from enjoying the park. Olmsted provided Rockefeller with extensive recommendations

¹²⁷ Eliot, "The Influence of the Automobile on the Design of Park Roads," 32.

¹²⁸ Eliot, "The Influence of the Automobile on the Design of Park Roads," 33-36.

¹²⁹ Olmsted, "Distribution of Metropolitan Parks," Parks and Recreation 7 (May-June 1924), 476-77.

¹³⁰ Olmsted, "Notes on Laying Out Roads For Pleasure Travel in Scenic Areas," City Planning 4 (October 1928), 281.

¹³¹ Olmsted, "Notes on Laying Out Roads For Pleasure Travel in Scenic Areas," 282-83.

for the construction of a motor road system that would harmonize with the island's network of scenic carriage roads. "The kinds of landscapes most tellingly valuable for motorists as such," Olmsted counseled, "are those which have a certain bigness of sweep and can be seen and enjoyed from a considerable stretch of a road by one moving rapidly along it."¹³²

Early twentieth-century motor parkway designers also had to respond to the growing use of parkways for utilitarian purposes. The provision of park connections remained a major consideration for parkways designers up through the 1920s and 1930s, but commuting and general traffic concerns were becoming increasingly prominent.¹³³ The evolution of parkways from recreational driveways to major commuting thoroughfares reflected the failure of conventional highways to adapt to the changing demands of the automobile age. Traditional parkways and park roads supplied the essential design precedents for motor parkway development, but a significant factor for proliferation of parkways in the 1920s and 1930s was widespread popular and professional dissatisfaction with the congestion, unsightliness, and safety hazards the increase in automobile traffic was bringing to ordinary streets and highways.¹³⁴

Technical aspects of road building, such as paving and construction methods, had improved steadily throughout the first three decades of the twentieth century (Figure 43). Dirt and gravel road were gradually replaced by oil-based macadam, asphalt, and reinforced concrete. Concrete surfaces were first employed on a wide scale in 1909, by highway builders in Wayne County, Michigan. Though more expensive to construct, smooth, long-lasting reinforced concrete soon became the pavement of choice for heavily trafficked highways.¹³⁵ Road building equipment grew increasingly powerful during this period, with the shift from horse

¹³² Letter, Frederick Law Olmsted to John D. Rockefeller, Jr., (1933), quoted in Eleanor G. Ames, "Frederick Law Olmsted, Jr. and the Motor Roads," in The Rusticator's Journal: A Collection of Articles from the Journal of the Friends of Acadia, edited by Tammis Coffin (Bar Harbor, Maine: Friends of Acadia, 1993), 26.

¹³³ Theodora Kimball Hubbard, and Henry Vincent Hubbard, Our Cities To-Day and To-Morrow (Cambridge: Harvard University Press, 1929) 153-54, 249.

¹³⁴ The push for parkways in the 1920s-1930s was also fueled by the economic incentives that Olmsted and Vaux had appealed to in launching the first parkways in the 1860s. Civic boosters, suburban real estate speculators, and regional development promoters like New York's parks and transportation czar Robert Moses played an enormous role in securing funding and legislation to support parkway projects, and in determining precisely where and by who the new parkways were to be constructed and associated fortunes to be made.

¹³⁵ Charles Upham, "The Last Two Decades in Highway Design, Construction and Maintenance," American City 43 (September 1930), 90-93; Spencer Miller, Jr., "History of the Modern Highway in the United States," in Highways in Our National Life: A Symposium, edited by Jean Labatut and Wheaton Lane (Princeton, New Jersey: Princeton University Press, 1950), 102-03; Albert Rose, Historic American Roads, from Frontier Trails to Superhighways (New York: Crown Publishers, 1976), 76-85.

and steam power to internal combustion gasoline and diesel driven machinery enabling highway engineers to pursue projects that would have been prohibitively expensive in earlier times. Advances in highway alignment, intersection design, and roadside landscaping proceeded far behind basic technical improvements, however. The typical highway department approach to road design was to straighten out curves, cut away slopes, and cut roadside growth well back from the traveled right-of-way (Figures . In addition to relying on the "shortest distance between to points" argument to justify the elimination of winding alignments, highway engineers believed that straight roads would be immune to obsolescence stemming from outdated design speeds. The desire for straight lines and uniform grades led highway engineers to link long straightaways--or "tangents"--with short, tight curves.¹³⁶ The major highway construction manuals of the day contained exhaustive information on pavements, grading, and drainage issues but addressed aesthetic concerns only in a cursory fashion, if at all. Parkways and park roads were considered the special concern of landscape architects, with little relevance to general highway design.¹³⁷

For the first few decades of the twentieth century, most motorists were content with the fact that highway engineers were improving the technical aspects of American roadways. The 1916 Federal-Aid Road Act and the 1921 Federal Highway Act poured millions of dollars to state highway departments to improve local and long distance roads, producing a significant increases in the mileage paved roads throughout the country. Nationwide expenditures on highway improvements jumped from \$430 million in 1921 to \$1.3 billion in 1930. Improved highway mileage nearly doubled over the same period, rising from 447,000 miles in 1921 to 854,000 miles in 1930.¹³⁸ As automobile ownership expanded and the impacts of motoring became increasingly apparent, landscape architects, transportation planners, scenery aesthetes, and the popular press increasingly attacked these conventional roadways as ugly and unsafe. The main problems, most critics stated, were the danger and inefficiency posed by poorly designed intersections and highways lined with unregulated commercial development. In terms of fatal accidents per passenger mile, the 1920s and 1930s were the worst decades in history.¹³⁹

¹³⁶ U.S. Department of Transportation, America's Highways 1776-1976: A History of the Federal-Aid Program (Washington, D. C.: Government Printing Office, 1976), 132.

¹³⁷ Harwood Frost, The Art of Roadmaking (New York: McGraw-Hill Book Company, 1910), 467. Another widely used text of the period, Arthur Blanchard's Elements of Highway Engineering (New York: John Wiley and Sons, 1915) exhibited similar disregard for aesthetics.

¹³⁸ Rae, The Road and the Car in American Life, 68; America's Highways 1776-1976, 113-15; Bruce Seely, Building the American Highway System: Engineers as Policy Makers (Philadelphia: Temple University Press, 1987), 72-73; Val Hart, The Story of American Roads (New York: William Sloane Associates, 1950), 192-97.

¹³⁹ According to Condit, manual traffic signals were introduced in New York City in 1920 and followed soon thereafter by automated electronic traffic lights (Condit, American Building Art: The Twentieth Century, 281).

Along with the dangers posed by at-grade intersections and excessive side streets was the long-standing legal precedent that guaranteed property owners access to roadways passing by or through their property. This had not represented a major problem when railroads were the primary means of transportation, but with the growing popularity of the automobile the guaranteed frontage right rules were turning the country's roadways into congested, unsightly, and dangerous linear slums. Merchants erected endless rows of garish billboards and built tawdry roadside establishments to capitalize on the growing market of motoring Americans in need of food, fuel, and lodging (Figures 46-47). Articles complaining about traffic congestion and roadside blight appeared in a wide range of professional journals and popular magazines. Life, Fortune, Harper's Monthly, and The New Republic pleaded for safer, more attractive highways. Life sent photographer Margaret Bourke-White to document roadside clutter along U.S. Route 1 and charged, "The nation that lives on wheels . . . has the dubious honor of having created, along 3,000,000 miles of highway, the supreme honky-tonk of all time."¹⁴⁰ A wide variety of automobile-oriented enterprise came under attack, but billboards, gas stations, and "hot dog stands" were condemned as the chief problems. Critics insisted that a new approach to motorway design was necessary (Figure 48). Modern motorways should combine the aesthetic and traffic circulation features of parkways with the technical improvements and higher speeds of advanced all-purpose highways.¹⁴¹

According to many observers, the best model for this new type of motorway was the pioneering motor parkway system of Westchester County, New York (Figure 49). The forerunner of this network was the Bronx River Parkway, which stretched for fifteen miles from the Bronx Zoo north to the Kensico Reservoir in central Westchester County. The Bronx River Parkway was completed in 1923, and was the first public parkway designed expressly

The number of fatal automobile accidents in the United States nearly tripled from 10,723 in 1918 to 31,215 in 1929 (America's Highways 1776-1976, 115). Highway experts W. A. Bugge and W. Brewster Snow identified the period from 1929-1939 as the most accident-prone decade in automotive history, citing a peak fatality rate of 16.2 per 100 million passenger miles in 1928 (W. A. Bugge and W. Brewster Snow, "The Complete Highway," in The Highway and the Landscape, edited by W. Brewster Snow [New Brunswick, N. J.: Rutgers University Press, 1959], 11).

¹⁴⁰ Quoted in Patton, Open Road, 66-67.

¹⁴¹ Benton Mackaye and Lewis Mumford, "Townless Highways for the Motorist: A Proposal for the Automobile Age," Harper's Monthly 163 (August 1931), 351; Mackaye, "Townless Highways," The New Republic 62 (12 March 1930), 94; Gilmore Clarke "Modern Motor Ways," Architectural Record (December 1933), 430; Clarke, "Some Views on Highway Design," paper presented before the Association of Highway Officials of the North Atlantic States at Atlantic City, N.J., 13 February 1936, 4); "Unfit for Modern Motor Traffic," Fortune 14 (August 1936), 85-99.

for automobile use.¹⁴² By the turn of the century, the river had become lined with small factories and working-class houses, whose privies often stood right at the banks of the stream. The river valley landscape becoming increasingly unsightly and pollution from these sources posed a threat to wildlife downstream in the Bronx Zoo. Concerned citizens pressured the New York legislature to work together with city authorities to create a parkway that would eliminate pollution and turn the banks of the Bronx River into an elongated public park for varied recreational uses. Unlike the proposals for Rock Creek and Potomac Parkway, where the creation of an elaborate network of new carriage roads was a central component of the original design, initial plans for the Bronx River Parkway simply incorporated existing roadways. The commission's first few reports concentrated on landscape rehabilitation and made no mention of constructing a special driveway in the park.¹⁴³ As automobile ownership grew rapidly during the 1910s, the Bronx Parkway Commission hit on the idea of using the river corridor to provide a scenic drive from Bronx Park to the attractively landscaped park surrounding the Kensico reservoir. Roadway constriction began in 1916. World War I intervened, delaying the parkway's completion until 1923. The motorway was an immediate success. It was soon crowded with motorists in search of rural scenery and commuters driving between jobs in the city and homes in the rapidly developing suburbs of Westchester County (Figure 50).¹⁴⁴

The popular and professional press praised the new parkway as a major achievement in motor road design. The Bronx River Parkway was the first road to consistently employ the design elements that defined the pre-World War II motor parkway. The basic features included the traditional parkway prohibition of commercial traffic such as trucks and buses; the separation of cross-traffic by means of attractively designed overpasses; limitation of access to widely spaced and carefully controlled entrance and exit points; and a broad right-of-way that provided ample scope for designers to screen out objectionable sights and produce attractive landscape compositions. The parkway reservation averaged 600' in width, ranging from 200'

¹⁴² In 1908 a group of private investors headed by William K. Vanderbilt built a two-lane toll road with a 24'-wide reenforced concrete surface, a 100'-200'-wide right-of-way, and no at-grade crossings. They called it the Long Island Motor Parkway, but speed, rather than landscape appreciation was the primary motivation for its construction. Wealthy Long Islanders used it to enjoy their powerful automobiles, and it served as the course for the first Vanderbilt Cup Race in October 1908. Vanderbilt deeded it to the state in 1937. (Wilbur Simonson, "Evolution of Modern Highway Design in the United States," in Landscape Design and Its Relation to the Modern Highway, ed. J. Carter Hanes and Charles Connors [New Brunswick, N.J.: Rutgers University College of Engineering, 1952], 13).

¹⁴³ Following the lead of professional commentators, early popular articles such as "New York's Proposed Bronx River Parkway," (Atlantic Monthly Review of Reviews 35 [May 1907]: 576-78) highlighted pollution abatement and scenic preservation, containing no references to roadway development.

¹⁴⁴ Newton, Design on the Land, 598-600; Clarke, "The Parkway Idea," in The Highway and The Landscape, ed. Brewster Snow (New Brunswick, N. J.: Rutgers University Press, 1959), 33-39.

to 1,200' depending on the topography and local conditions. The parkway was built as a relatively narrow 40'-wide four-lane road accommodating undivided two-way traffic. Two small sections of landscaped median were constructed, but the idea of constructing a fully-divided roadway was dismissed as unnecessary and inordinately expensive.¹⁴⁵ Continuous median strips remained a rarity even in parkway design until the late 1930s, with Delaware's Coleman du Pont Highway and a few sections of the Long Island parkway system providing the major exceptions.¹⁴⁶ The elimination of cross traffic and the vast reduction in the number of exits and entrances were sufficient to convince most observers that the Bronx River Parkway should serve as a model for future motorway development. There were no stop signs on the parkway, and dangerous left turns were almost completely eliminated. Earlier parkways had banned commercial traffic and produced equally appealing roadside landscapes, but none had attempted to limit access so systematically on such a large scale. Even the Bronx River Parkway was not completely free of turning and entering traffic, however. Smaller access roads and cross streets came into the main driveway, though entrances were staggered to prevent direct cross-traffic. Most of these minor intersections were eliminated within several years of the parkway's completion.

Westchester County Parkway Design Principles

The parkway design principles developed by Westchester County Park Commission can be credited with setting the standard for modern motor parkway design during what might be termed its "Golden Age" between the two world wars.¹⁴⁷ Through their influence on the

¹⁴⁵ Jay Downer, "County Parks and Roadside Development in Westchester County, N.Y.," (Paper presented at Thirteenth Annual Conference on Highway Engineering, University of Michigan, February 18, 1927, reprinted in J. M. Bennett, Roadside Development [New York, The MacMillan Company, 1929]), 174-79; Clarke, "The Parkway Idea," 33-42; Christopher Tunnard and Boris Pushkarev, Man-Made America: Chaos or Control? (New Haven: Yale University Press, 1963), 161-62.

¹⁴⁶ The Coleman du Pont Highway was begun in 1924 as a single 16' roadway on one side of a broad, straight right-of-way; it was soon widened to 24' feet. A parallel 24' wide roadway was then built on the opposite side of the right-of-way, leaving a broad grassy median separating opposing streams of traffic. There were no provisions for the systematic elimination of cross traffic or limitation of access from abutting property, however (Simonson, "The Evolution of Modern Highway Design," 14). Tunnard and Pushkarev credited the 1934 Meadowbrook Causeway approach to Long Island's Jones Beach as the first significant implementation of the continuous median concept on a modern limited-access parkway. The six-mile long, fully divided, limited-access, grade-separated Avus had been completed near Berlin in 1919, but it was a numbingly straight race-track of a road, rather than a sensitively landscaped parkway; like Vanderbilt's 1908 Long Island "parkway," the experimental Avus was constructed by a private organization (Tunnard and Pushkarev, Man-Made America, 162-63).

¹⁴⁷ The following specifications were compiled from a number of contemporary articles including E. W. James, "Parkway Features of Interest to the Highway Engineer," Public Roads 10 (April 1929), 21-28; Jay Downer "How Westchester Treats its Roadsides," American Civic Annual, 1930, 165-67; Downer, "Principles of Westchester's Parkway System," Civil Engineering 4 (February 1934), 85-87; Downer, "County Parks and

Mount Vernon Memorial Highway and on the "complete highway" concept promoted by federal road-building agencies and postwar engineering schools, the Westchester County parkways set the stage for the development of the interstate highway system in the 1950s and 1960s.¹⁴⁸ The Westchester County parkway designers refined their techniques throughout the 1920s and 1930s, as rising speeds and increasing traffic volumes revealed the shortcomings of earlier efforts.¹⁴⁹ Later parkway alignments were adapted to higher speeds by using longer radius curves accompanied by gradual "spiral" transitions to eliminate sharp changes of direction between curves and tangents. By 1928 parkway experts agreed that curves with a radius of less than 800' were undesirable and recommended that superelevation, or "banking" be employed on curves of less than 1200' radius. To accommodate speeds of 30 mph, the Hutchinson River Parkway provided superelevation on all curves with less than 4,000' radius. Tangents were generally eliminated from parkway alignments, unless existing conditions or limited right-of-ways made them unavoidable. As a general goal, parkway grades were kept below 6 per cent, though 8 per cent grades were considered permissible for short distances. Blind vertical curves at the tops of hills were avoided and a minimum sight distance of 500' was recommended. A single undivided 40' wide pavement was considered adequate to accommodate two lanes of traffic traveling in either direction. Supplementary 10' wide turning lanes were recommended at intersections where traffic islands were provided for additional safety. A major reason for the delayed adoption of continuous medians and independent one-way roads, in fact, was the misperception that two 30' wide pavements were needed to replace a single conventional 40' two-way pavement.¹⁵⁰ In some cases bridge clearances and basic grading were extended to 60' to provide room for future widening. Bituminous concrete

Roadside Development in Westchester County, N.Y.," in J. M. Bennett, Roadside Development, (New York, The MacMillan Company, 1929), 173-82; Chester Wheeler (another Westchester County landscape designer) "Planning Our Traffic Parkways--Outside in? Inside Out?" Parks and Recreation 17 (May 1934), 317-22; John Nolen and Henry V. Hubbard, Parkways and Land Values, Harvard City Planning Studies XI (Cambridge: Harvard University Press, 1937), 107-20; and Gilmore Clarke's extensive writings on the subject, especially "Modern Motor Arteries," in Planning Problems of Town, City and Region: Papers and Discussion at the Twenty-second National Conference on City Planning, June 23-26, 1930 (Philadelphia: William F. Fell Co., 1930), 61-75; "Is There A Solution for the Through Traffic Problem?" Parks and Recreation 13 (July-August 1930), 367-75; and "The Parkway Idea," in Brewster Snow, ed., The Highway and The Landscape (New Brunswick, N. J.: Rutgers University Press, 1959), 32-35.

¹⁴⁸ Downer, "County Parks and Roadside Development in Westchester County, N.Y.," 181.

¹⁴⁹ James, "Parkway Features of Interest to the Highway Engineer," 32.

¹⁵⁰ For a brief period in the late 1920s and early 1930s highway departments promoted three-lane roadways, in which the center lane served as a passing zone for traffic moving in both directions. Problems arose when cars moving in opposite directions attempted to pass at the same time, and the idea was soon abandoned "The New Type of Three-Track Road," City Planning 2 (October 1926), 286; Wilbur Simonson, "Evolution of Modern Highway Design in the United States," in Landscape Design and Its Relation to the Modern Highway, 12; America's Highways, 1776-1976, fn. 132.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 64)

("asphalt") or reenforced concrete darkened with additives to harmonize with the landscape were the preferred paving materials. Concrete curbs were recommended in place of traditional shoulders. Curbs discouraged motorists from pulling off the side of the road except in emergencies, reducing the danger posed by roadside parking and picnicking, common recreational practices that were generally prohibited on parkways except in designated locations. Concrete curbs and catch basins also provided a more effective and attractive means of removing surface water than the traditional arrangement of gravel shoulders and continuous roadside ditches.

A minimum right-of-way of at 200' to 250' was recommended to provide adequate room to locate the roadway and produce attractive planting and grading schemes (Figure 51). Wherever possible, parkway reservations widened to include existing parks and lands suitable for recreational development in the form of golf courses, picnic areas, and swimming and boating facilities (Figure 52). Most of the Westchester County parkways also contained extensive networks of foot and bridle trails. The Westchester County parkways varied from 200'-wide in the most densely developed areas to 1,700'-wide further out in the countryside where additional recreation features were provided.

Parkway construction often demanded extensive manipulation of the landscape in order to produce the illusion of "natural" beauty. Parkway designers rejected the steep, regular side slopes favored by conventional highway engineers in favor of gentle, rolling profiles that looked more like natural topography. Detailed study of topographical maps and field conditions was required to produce alignments that minimized expensive and unsightly excavations while taking full advantage of natural features. Alignments were chosen to preserve desirable examples of existing vegetation as much as possible. When conditions permitted, topsoil, trees, and shrubs were removed and replaced nearby to enhance the surrounding landscape or conceal construction scars. Plantings were designed to mimic natural patterns and plant associations (Figure 53). The goal of grading and planting efforts was to make the parkway harmonize with the natural landscape. Where parkways passed through unattractive areas, dense screens of planting helped to screen out objectionable sights. While the Bronx River Parkway initially only provided grade separations at major intersections, many later parkways generally eliminated all crossings whatsoever (Figure 54). Major cross streets were carried above or below the main parkway drive on attractive grade separations designed to harmonize with the surrounding landscape (Figure 55). Rough-textured local stone laid in rustic, irregular courses was often used to disguise modern, reinforced concrete bridges (Figure 56). The rigid frame concrete arch bridge, developed by Westchester County Park Commission engineer Arthur G. Hayden, was widely employed (Figures 57-58). Foot and bridle path bridges were generally simple reenforced concrete or timbered structures with

wood guard rails.¹⁵¹ Other architectural features were also carefully integrated with the parkway landscape. Signs, guard rails, light posts, and other incidental construction features were designed to harmonize with the overall parkway landscape (Figure 59). The Westchester County Park Commission developed rustic guard rail and light post designs that were widely copied in other park and parkway developments (Figure 60). Bath houses, service stations, and concession stands associated with parkway recreational areas tended to be of rustic stone or wood construction, with real or fanciful allusions to local history and building traditions (Figures 61-62).

Planners and landscape architects argued that parkways were more economical, safer, and more efficient than traditional highways. The limited-access feature was an undeniable improvement over conventional highways lined with uncontrolled roadside development; accidents from turning and entering traffic were markedly reduced. The parkway's wide, planted median strips further enhanced safety by providing a buffer zone between opposing streams of traffic and eliminating the glare of oncoming headlights. Parkway advocates claimed that, despite their high development costs, parkways paid for themselves in higher land values and reduced travel time, while conventional highways provided only fleeting traffic improvements and inevitably depleted the long-term worth of surrounding property.¹⁵²

All of these arguments came up when federal officials began looking for a solution to the unsightly, congested, and dangerous conditions of the main roadways linking Washington and Mount Vernon. By the 1920s the highway entrances to Washington were lined with roadside clutter. The electric railway had given way to the automobile as the primary means of reaching Mount Vernon and the old roads were overwhelmed by tourists driving to Mount Vernon in private vehicles and buses. The prospect of hordes of visitors traveling to Mount Vernon to celebrate the bicentennial of Washington's birth in 1932 prompted the federal government to enlist the Bureau of Public Roads (BPR) to recommend a solution. The decision to build a completely new, informally landscaped motor parkway rather than to simply upgrade existing roadways or construct a traditional formal boulevard along the lines proposed by the Mount Vernon Avenue Association demonstrated federal endorsement of Westchester County parkway design principles as the key to modern motorway construction. The BPR saw the project as a way to its mission of promoting modern highway design. The agency

¹⁵¹ Gilmore Clarke, "Park Bridges," Parks and Recreation 10 (May-June 1927), 447-50, and "Bridges: The Past Compared to the Present," Parks and Recreation 11 (Sept-Oct 1927), 19-23.

¹⁵² "Parkways for Pleasure and Utility," 422; Clarke, "The Parkway Idea," 54; "Modern Motor Arteries," 63; "Modern Motor Ways," 434-35; Downer, "Principles of Westchester's Parkway System," 87; "County Parks and Roadside Development in Westchester County, New York," 181; Swan, "The Parkway as Traffic Artery, I," 86. An independent study by planners Henry Hubbard and John Nolen came to similar conclusions about the economic benefits of parkway development, especially in Westchester County (Nolen and Hubbard, Parkways and Land Values).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 66)

recognized the acclaim it would receive by building the parkway as a major component of the nationwide George Washington birthday bicentennial celebration would generate publicity for the cause of modern motorways.

MOUNT VERNON MEMORIAL HIGHWAY: AUTHORIZATION

The Mount Vernon Avenue Association organization played no official role in the revival of the memorial highway movement during the 1920s. Local boosters made repeated efforts to rekindle support for the project during the first quarter of the twentieth century, but supporters made little headway in convincing Congress of the memorial avenue's national significance until the approaching bicentennial of George Washington's birth in 1932 threatened to create a traffic crisis.¹⁵³ In 1924, the establishment of a national commission for the celebration of the bicentennial of George Washington's birth, together with growing dissatisfaction over existing road conditions, finally paved the way for the construction of Mount Vernon Memorial Highway (MVMH) between 1929 and 1932.¹⁵⁴

The Commonwealth of Virginia and the federal government had made occasional attempts to improve the main highways leading from Washington and Alexandria to Richmond and points south. The establishment of the Lorton Correctional facility in 1910 drew protests from the Mount Vernon Ladies' Association, but the need to accommodate prison traffic resulted in better conditions on Telegraph Road, which still served as one of the primary routes south from Alexandria.¹⁵⁵ In 1915 the Bureau of Public Roads (BPR) built an experimental bituminous gravel pavement from the Fort Myer road south to Alexandria. Oil-bound macadam was initially considered a promising means of countering the increased wear and tear produced by automobiles, but the heavy truck traffic generated by World War I soon destroyed this experimental roadway. By the mid 1920s, the Bureau of Public Roads ruled that building a new roadway would be more economical than trying to maintain the existing road. U.S. Route 1, the other main roadway between Washington and Alexandria, had a better surface, but it passed through railroad yards and industrial areas, with a number of hazardous curves and at-grade railroad crossings. Oil tanks, freight facilities, overhead trolley wires, billboards, and commercial development lined the roadway (Figures 63-68). During World War I the

¹⁵³ S. 1047, 60th Cong., 1st sess., 5 December 1907, called for "the building of a public avenue on the south side of the Potomac river from the city of Washington to Mount Vernon," to be paid for, in part, by the federal government's \$120,000 debt to the State of Virginia, which was to be turned over to the Mount Vernon Avenue Association. In 1923 Alexandria Representative R. Walton Moore sponsored a bill (H.R. 524, 68th Cong. 1st sess., 5 December 1923) "To authorize and direct the construction and maintenance of a memorial highway" between Washington and Mount Vernon, was not approved, but led to the 1924 hearings and a second unsuccessful bill in 1925 (H.R. 3923, 69th Cong., 1st sess., 7 Dec 1925).

¹⁵⁴ U.S. George Washington Bicentennial Commission, Report of the United States George Washington Bicentennial Commission, vol. 5, Activities of the Commission and Complete and Final Report (Washington, D.C.: United States George Washington Bicentennial Commission, 1932); U.S. Congress, House, Committee on Roads, Roads. Hearings before the Committee on Roads . . . on H.R. 524, 68th Cong., 1st Sess., 25 April 1924.

¹⁵⁵ Netherton et al, Fairfax County, 503.

federal government had constructed a reinforced concrete roadway from Alexandria south to Fort Humphries. This highway was built to meet war-time needs, with little attempt to improve on traditional wagon road alignments. While the concrete surface represented modern technical advances it was not an attractive route for tourist traffic. The BPR pointed out numerous problems with dangerous curves, narrow traffic lanes, and generally poor alignment. Mount Vernon-bound motorists could only make use the modern roadway as far as Gum Springs, where the final two miles to Mount Vernon was a narrow gravel road with a high central crown and no shoulders (Figure 68). This roadway had several dangerous blind horizontal and vertical curves. Upon reaching Mount Vernon, motorists had to make a dangerous blind curve under an unsightly concrete overpass that had been constructed to extend the electric railway to Fort Humphries during the war. The electric railway's tracks, overhead-wire poles, and turn-around loop presented additional obstacles and eyesores (Figures 69-70), prompting BPR Chief Thomas MacDonald to exclaim, "I feel it is a disgrace to allow the large numbers of people who annually come here from all over the world to visit this national shrine to be dumped into the mud at the entrance gate in the way they now are."¹⁵⁶

Despite these conditions, motorists drove to Mount Vernon in ever-increasing numbers. According to statistics kept by the Mount Vernon Ladies' Association, the number of non-steamboat visitors more than doubled between 1910 and 1918, climbing from 56,723 to 127,398. The association grouped together visitors arriving by both electric railway and motorcar, but the trolley had a bad reputation by this time and it is safe to assume that most of this increase was due to the rise in automobile tourism. Overland visitation grew even more rapidly during the next decade, rising to 216,608 in 1923 and almost doubling again by 1927, to 408,451.¹⁵⁷ In preparation for Congressional hearings on the revival of the memorial highway project, the BPR counted 9,157 private autos and 208 motor buses using the Mount Vernon road during one week in August 1925, for a daily average of 1,306 automobiles and 30 buses. The BPR noted that large numbers of local motorists were using the highways north of Alexandria for recreational driving despite the dangerous and unsightly conditions, and predicted that this practice would become even more popular if the Virginia waterfront were

¹⁵⁶ Roads. Hearings before the Committee on Roads . . . on H.R. 524, 2-3, 7. Additional information on road conditions from captions in Wilbur Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report: The Landscape Architectural Problems in its Development," (U.S. Bureau of Public Roads, U.S. Department of Agriculture, 1932 [Illustrated copy at U.S. Department of Transportation Library, Washington, D.C.]), plates 3-B, 5, 7-E, 7-F, 7-G, 7-H, 9, 11, 14-17. Photographs of billboards and roadside development along Route 1 appeared in American Civic Association, Highway Entrances to Washington--The Federal City (Washington, D.C.: American Nature Association, 1930), billboard statistics, p. 26.

¹⁵⁷ "Annual Visitorship to Mount Vernon," data submitted by Col. Dodge, February 1928 (Bureau of Public Roads Classified Central File, 1912-50, 420 General Virginia, 1926-29, Mount Vernon Memorial Highway, Box 1398, Record Group 30, National Archives);

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 69)

developed along the lines of Washington's Potomac Park.¹⁵⁸ In addition to this recreational traffic, the transformation of Fairfax County from farmland to suburb produced a growing commuter population and created a broad outcry for road improvements.

Road conditions in Arlington and Fairfax counties followed national trends in that aesthetic development lagged far behind basic physical improvements. By the 1920s the local roads were better paved than a decade earlier, but there was a growing sentiment that billboards and tawdry roadside establishments had turned the highway approaches to Washington and Mount Vernon into unsightly linear slums.¹⁵⁹ Route 1 was lined with billboards and tourist-oriented services, including garishly adorned filling stations, barbecue joints, and "hot dog stands." A study conducted prior to the construction of Mount Vernon Memorial Highway counted 28 billboards per mile on U.S. 1 between the southern edge of Fairfax County and the District line. Conditions were just as bad at the northern end of the future parkway, where billboards lined old Georgetown Pike, and gas stations and signs clustered around the Virginia approach to Chain Bridge. The American Civic Association and the National Council for the Protection of Roadside Beauty called attention to these problems in a harshly negative report on the main highway entrances to Washington. Illustrated with photographs of billboards and filling stations along Route 1, the Baltimore-Washington Highway, and other heavily traveled routes, this report challenged local citizens to do a better job of policing their roadsides, proclaiming, "It is incredible that the principal highway approaches to the National Capital of a people endowed with idealism and wealth should be permitted to remain repellingly ugly."¹⁶⁰ Commission of Fine Arts Chairman Charles Moore also condemned the highway conditions between Washington and Mount Vernon. Pointing to the attractive parkway systems of Boston, Chicago, and New York's Westchester County, Moore called for the creation of a continuous parkway stretching along the Virginia shore of the Potomac from Mount Vernon to Great Falls. Moore called for a broad, tree-lined boulevard constructed along the lines proposed by the Senate Park Commission at the turn of the century.¹⁶¹

The upcoming bicentennial of Washington's birthday finally provided congressional advocates with enough support to overcome earlier objections that the highway from Washington to Mount Vernon was a local rather than a national concern. When the House Committee on Roads met in April 1924 to consider a memorial highway bill submitted by Alexandria

¹⁵⁸ BPR traffic study reported in U.S. Congress, Senate, Mount Vernon Memorial Highway, 70th Cong., 1st Sess., 1928, Report No. 469 (to accompany S. 1369), p. 5.

¹⁵⁹ Netherton et al, Fairfax Country, 529-41.

¹⁶⁰ American Civic Association, Highway Entrances to Washington--The Federal City (Washington, D.C.: American Nature Association, 1930), quote, p. 19, billboard statistics, p. 26.

¹⁶¹ "Pictures Continuous Park, Great Falls to Alexandria," Washington Evening Star, 24 January 1923.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 70)

Congressman R. Walton Moore, supporters of the project echoed their nineteenth-century predecessors. Charles C. Callahan, an Alexandria citizen and authority on the life of George Washington, prepared an extensive statement detailing Washington's associations with various sites along the proposed route. Long-time avenue booster and former Alexandria congressman C. C. Carlin insisted that it was a fundamental patriotic duty to build a monumental boulevard "from the Capital of the greatest nation on earth to the home and tomb of the one man to whom everybody in America is willing to do homage, whatever his politics and wherever he may live." Carlin cast the proposed boulevard as a linear lesson in American history, proclaiming, "there is more in that 14 miles of country to call up the early history of the United States than there is in all other parts of the country combined."¹⁶²

A number of prominent local citizens and national institutions supported the project. A representative of the District of Columbia Chapter of the Colonial Dames testified to the importance of improving access to Mount Vernon in time for the upcoming bicentennial celebration. The Commission of Fine Arts's Charles Moore emphasized the boulevard's role as a component of the park system of the national capital region. Phillip H. Campbell, who lived along the existing roadway, testified that weekend and holiday traffic to Mount Vernon had become so heavy that "Sixteenth Street has nothing on Mount Vernon Avenue, so far as traffic is concerned." M. B. Harlow even put in an appearance to recount the project's history and defend the original conception of a 250'-wide monumental boulevard lined with statues and exhibition buildings. The committee was not inclined to consider this option, however, and he was politely cut off and asked to submit the rest of his statement in writing.¹⁶³

BPR Chief Thomas MacDonald recounted the deficiencies of the existing roadways and presented estimates for the amount of time and money needed to prepare an appropriate route for bicentennial visitors. MacDonald maintained that Route 1 and the existing "Mount Vernon Avenue" leading from Arlington Cemetery to Alexandria were capable of handling the expected traffic burden, but warned that the two end segments, from Gum Springs to Mount Vernon and from the proposed Virginia terminus of the Memorial Bridge to Mount Vernon Avenue were "totally inadequate." At this point in time, MacDonald contended that a suitable memorial highway could be constructed merely by upgrading existing roadways. He estimated that minor land acquisitions to allow for improved alignments and landscaping would amount to less than 50 acres, most of which, he claimed, would be donated. Construction and landscaping costs were calculated at \$890,000 for a two-lane, 20'-wide asphalt-covered

¹⁶² U.S. Congress, House Committee on Roads, Roads. Hearings before the Committee on Roads . . . on H.R. 524 (68th Cong., 1st Sess., 25 April 1924); Callahan's statements, pp. 10-15; Carlin's statements, pp. 16-21.

¹⁶³ Roads. Hearings before the Committee on Roads . . . on H.R. 524 (68th Cong., 1st Sess., 25 April 1924); Colonial Dames, p. 22; Moore, 23-25; Campbell, 8; Harlow, 25-27.

concrete roadway, or \$1,200,000 for a three-lane 30' roadway. Both treatments called for the establishment of an 80'-wide right-of-way, which would be "properly graded, sodded, and landscaped with trees and shrubbery" to resemble the formal driveways in Washington's Potomac Park. A bridle path would parallel the motor road. MacDonald recommended the wider surface and urged that the project be initiated as quickly as possible in order to ensure completion in time for the bicentennial celebration. He calculated that basic grading and road construction would require at least three years, with the landscaping work extending at least a year or two longer. MacDonald emphasized the importance of providing more dignified parking and unloading arrangements to replace the existing disorder at the Mount Vernon terminus. Throughout his testimony, MacDonald stressed that the BPR's figures represented only general estimates based on a relatively cursory inspection of existing conditions, and promised to come up with more detailed facts and figures at a later date.¹⁶⁴

The House Committee on Roads refrained from taking action on the bill until the BPR could provide a more accurate survey. Congressman Moore introduced another Mount Vernon Avenue bill in 1926 requesting the \$750,000 to get the project underway. Moore's bill called for the Secretary of Agriculture to conduct a survey of potential alignments and prepare plans, specifications, and estimates for the memorial highway. The committee declined to endorse the legislation, but in February 1926 it voted unanimously to authorize the BPR to produce an official report detailing the width and character of the proposed highway, the advisability of using existing roadways, and the probable cost of the right-of-way and construction. At this point, the route location remained up in the air, with the possibility of upgrading existing roadways remaining a serious consideration. The assumption that the memorial highway would follow an inland location encompassing traditional travel routes and historic sites continued to shape many observers' perception of the project, but MacDonald's insistence on securing a broad right-of-way suitable to modern motorway development suggests that the BPR was already considering a radical alteration to the original avenue proposal. As the project began to attract renewed attention from local citizens and the broader planning community, a conflict soon erupted between supporters of the original proposal and the planning professionals of the BPR, Commission of Fine Arts, and National Capital Park and Planning Commission, who favored a new route along the Potomac shoreline.¹⁶⁵

It is difficult to determine who first proposed the riverfront location. Frederick Law Olmsted, Jr., the landscape architecture expert for both the Commission of Fine Arts and the National

¹⁶⁴ Roads. Hearings before the Committee on Roads . . . on H.R. 524 (68th Cong., 1st Sess., 25 April 1924), MacDonald, 1-7.

¹⁶⁵ U.S. Congress, House Committee on Roads, Roads. Hearings before the Committee on Roads . . . on H.R. 3923 (69th Cong., 1st Sess., 15 February 1926).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 72)

Capital Park and Planning Commission, recommended locating the parkway along the riverfront after reconnoitering a variety of alternatives in March 1926. Commission of Fine Arts secretary Charles Moore forwarded Olmsted's suggestion to Congressman Moore, who passed it on to BPR Chief MacDonald, but for the time being, the BPR still appeared content with idea of constructing a traditional formal boulevard along the ridge top route that had been endorsed by the Mount Vernon Avenue Association, the Hains report of 1890, and the Senate Park Commission report of 1901-02. In early May 1926, BPR engineer P. St. J. Wilson provided the House Committee on Roads with a preliminary report describing an alignment that passed near Arlington Cemetery and Alexandria's George Washington Masonic Memorial, ascending the ridges between Washington and Mount Vernon on grades as high as 7 per cent "in such a way as to afford splendid views" of the Potomac River valley. While this route approximated earlier suggestions, Wilson recommended acquiring a broad new right-of-way in order to facilitate "suitable landscape treatment and to allow for the expansion of the traffic facilities which may be needed in the future." Wilson was somewhat vague about the nature of the proposed landscape treatment, stating only that the road should be designed "to give it the monumental character which would comport with its memorial purpose." He recommended a 200'-wide right-of-way encompassing an 80'-wide graded roadbed carrying a 40'-wide paved surface. The rolling terrain would require some heavy cuts and fills, but Wilson estimated the entire project could be completed for \$2 million, which included the cost of acquiring undonated portions of the right-of-way. In order to complete the project in time for the bicentennial, he urged that land acquisition and preliminary grading begin by 1927. Bridges and drainage structures should be substantially completed by 1928, and landscape work should be underway by 1929; paving and final landscaping would be completed over the next to years to ensure that the project would be ready for formal dedication on February 22, 1932.¹⁶⁶

The BPR soon renounced this modified version of the traditional inland route, however, and produced a detailed report on the relative merits of the inland and riverfront locations that was weighted heavily in favor of the latter. The Army Air Service was engaged to produce an aerial photomosaic of the countryside between Arlington Cemetery and Mount Vernon, on which the two competing routes were delineated (Figure 71). The BPR also produced a conventional map showing both proposals, which it circulated to design professionals and provided to local newspapers for reproduction (Figure 72). The local appeal of the original Mount Vernon Avenue Association route was reflected in the Washington Sunday Star's inclusion of the older alternative along with the BPR's two new proposals on a map illustrating a September 1926 article on the project, despite the fact that BPR had officially eliminated the

¹⁶⁶ Letters, Charles Moore to R. Walton Moore, 13 March 1926; R. W. Moore to MacDonald, 15 March 1926; MacDonald to R. W. Moore 16 March 1926; P. ST. J. Wilson to Cassius C. Dowell, Chairman, House Committee on Roads, 8 May 1926; all in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives.

earlier alignment from consideration. The paper reported that the river front route was likely to win approval. Reflecting further confusion over the BPR's intentions, the newspaper borrowed heavily from Callahan's 1924 Congressional testimony to provide a detailed description of the historical associations of the inland route, as if these features would be included in the rival riverfront location.¹⁶⁷

The BPR's official report, which was completed in early January 1927 and served as a key document in the 1928 legislation that secured congressional authorization for the memorial highway project, argued strongly for the riverfront location on practical, patriotic, and aesthetic grounds. BPR Chief MacDonald insisted that the river route was mandated if the government wanted to build "a highway of fitting character . . . to do justice to the expectations of the citizens of this country." The report credited Harlow, Hains, and the Mount Vernon Avenue Association for their roles in initiating the memorial highway movement, but declared that the routes suggested at the turn of the century had become obsolete due to subsequent industrial, residential, and commercial development, along with the changing nature and volume of tourist traffic caused by the rise of motoring. According to the BPR's new assessment, even the revised inland route "should not be seriously considered when all the memorial, historical, and scenic advantages are in the river route." The BPR declared, "The advantages of the river route are many and lie in features of particular importance by virtue of their appropriateness to the monumental character of the proposed highway. It abounds in historical interest and passes directly through the city of Alexandria, which is more closely associated with the memory of Washington than any other place in the country except Mount Vernon itself." The BPR's list of historic attractions included the usual list of Washington's associations with Alexandria such as Christ Church, Gadsby's Inn, and the sites of Washington's numerous military and civic activities, and added new sites unique to the river route, such as the original District of Columbia boundary stone at Jones Point and Abingdon, the birthplace of Martha Washington's granddaughter Nelly Custis, which was located along the proposed route near the present site of National Airport. The BPR described the scenic and recreational virtues of the riverfront route, assuring that the broad estuaries that had long hampered efforts to construct roadways along the Potomac shoreline could be transformed into marinas and sailing basins, or filled to create additional park land as had been done across the river in Potomac Park. "When so developed," the report declared, "this route would be unrivaled in beauty by any highway in the country, and would form a recreational driveway unsurpassed in any capital of the world."¹⁶⁸

¹⁶⁷ "Routes Staked Out for Boulevard from Arlington Memorial Bridge to Mt. Vernon to be Built Before 1932," Washington Sunday Star 19 September 1926.

¹⁶⁸ P. St. J. Wilson, "Report on Proposed Memorial Highway from Arlington Bridge to Mount Vernon," dated January 10, 1927, reproduced in U.S. Senate, Mount Vernon Memorial Highway, 70th Cong., 1st Sess., 1928, Report No. 469 (to accompany S. 1369), 2-3, 5-7; Wilson's report was also reproduced in U.S. Congress, House,

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 74)

The BPR's report included a detailed description of the planned development of the riverfront parkway. The highway would begin at the Virginia terminus of the proposed Memorial Bridge, extend along Columbia Island and across Boundary Channel, then go under the U.S. 1 and railway bridges, and run between the railroad tracks and the Potomac shoreline to Alexandria. Passing through Alexandria along Washington Street, it would cross Great Hunting Creek on a new bridge and then parallel the electric railway to the Wellington/Collingwood area before returning to the Potomac shoreline at Fort Hunt and sweeping along the riverfront before bending slightly inland to cross Little Hunting Creek and ascend the final hill to Mount Vernon. In addition to being ideally suited for the park agencies' plans to provide waterfront recreational facilities and preserve and protect the Potomac shoreline, the riverfront location was also cast as ideal for modern motorway development. The hilly terrain of the inland route produced a rolling profile with at least two miles of 3-5 per cent grades and another two miles of 5-7 per cent grades, which were generally considered too steep for modern motorway construction. The river front route, in contrast, was relatively flat, with a few gently rolling hills. Placing the highway along the river also minimized the number of intersecting roadways, enabling the BPR to claim that, with the exception of downtown Alexandria, the new highway would be virtually free of at-grade intersections. The river route would require only two or three grade separation structures to ensure free-flowing traffic movement, while the cost of overpasses and underpasses was now pointed to as one of the major detriments of the inland route, which ran through heavily developed terrain and crossed numerous local roads along with the major turnpikes and railroads leading into Alexandria. The federal government would own virtually all of the land between the riverfront parkway and the Potomac shoreline, but the BPR warned that Alexandria's rapid growth would soon produce "city traffic conditions" all along the proposed inland route, causing problems from both practical and aesthetic standpoints. The main disadvantage to the river route was its cost. BPR engineers calculated that it would cost 25 per cent more than the inland location, at \$4.2 million dollars versus \$3.1 million. The major reason for the disparity was that the winding riverfront location resulted in a total length of 14.6 miles as opposed to 12.5 miles for the more direct inland route. Both of these estimates were based on a right-of-way of 200', which would provide room for ample landscape development on either side of an 80'-wide graded section that would initially be paved to a width of 40' but would be designed to accommodate additional traffic lanes that could be constructed at a later date. The BPR cautioned that the memorial highway was not conceived "as a speedway," but noted that its preliminary design provided for "a smooth flow of traffic, with circles at intervals for turning" and that it was planned "for maximum safety under all conditions." Bridges would be wide enough to carry a 60'-wide pavement with 5'-wide sidewalks on either side. They would be constructed of reinforced concrete with smooth-

Memorial Highway from Washington City to Mount Vernon via the Arlington Memorial Bridge, 70th Cong., 1st Sess., 28 March 1928, Report No. 1065 (to accompany H.R. 4625). Subsequent page numbers refer to the Senate version.

cut granite facings designed to harmonize with the Arlington Memorial Bridge. The BPR included typical highway cross sections and sketches of the proposed bridge treatments in its report. The mechanical formality of these designs presented a striking contrast to the informal planting plans and rustic bridge treatments employed several years later when the highway was finally constructed under the influence of parkway experts from the Westchester County Park Commission. The BPR concluded its report by stating, "We have no hesitation in strongly recommending as superior to any other the location conforming approximately to the line which has been described as the river route." The report noted that the Secretary of War, the Commission of Fine Arts, and the National Capital Park and Planning Commission (NCP&PC) all endorsed the river front location. The Virginia State Highway Commission and the Alexandria Chamber of Commerce supported the river front route as well. Both NCP&PC and the Commission of Fine Arts suggested minor changes in alignment and urged the federal government to acquire an even broader right-of-way to protect views and allow for subsequent park development. The noted planner Harland Bartholomew inspected the proposed routes in October 1926 and also endorsed the riverfront location. In view of the cursory nature of the BPR's initial maps and drawings, however, Bartholomew recommended the bureau conduct a more detailed study from a "landscape architectural point of view" before making final plans, estimates, and land acquisitions.¹⁶⁹

News of the professional design community's unanimous approval of the riverfront parkway route prompted proponents of the traditional inland route to conduct a spirited letter-writing campaign directed at BPR officials and local newspapers.¹⁷⁰ The chief opposition to the river route came from residents of Fairfax County. This led the BPR to contend that river route opponents were mainly real estate speculators seeking to profit from land development along the inland alignment. While this may well have been true, a number of potentially valid criticisms were leveled at the river front location. The chief objections to the shoreline route were its longer and circuitous alignment, the elimination of panoramic vistas from the ridges behind Alexandria, the expensive landfilling operations required at Fourmile Run, Roaches Run, and Great Hunting Creek, and the unattractive conditions where the roadway would be squeezed between the river and the railroad tracks and industrial facilities at Potomac Yards. Noting that "People, sometimes, and birds and beasts always, take a direct course in going from place to place," one writer attacked the BPR for proposing to construct "a winding,

¹⁶⁹ Wilson, "Report on Proposed Memorial Highway from Arlington Bridge to Mount Vernon," 2-4, 6-7; letter, J. T. Preston, secretary, Alexandria Chamber of Commerce to Wilson, 13 December 1926; letter, Bartholomew to Wilson, 27 October 1926; letter, Charles Moore to Wilson, 7 January 1927; letter, H. G. Shirley, Chairman, Va. State Highway Commission to Wilson, 26 Jan 1927 (correspondence in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

¹⁷⁰ "Moore Outlines Highway Progress," Washington Evening Star 7 December 1926.

twisting cowpath" rather than "a road of magnificent proportions."¹⁷¹ Another writer contended that Washington himself would have preferred the views and historical associations of the inland route, and objected that the dust and smoke emanating from railroad facilities at Potomac Yards would make it hard for motorists to see their way along the river front route.¹⁷²

Another criticism was that building the parkway along the riverfront would hamper local commerce by limiting industrial development along Alexandria's waterfront. The Arlington County Chamber of Commerce opposed the riverfront development on these grounds.¹⁷³ The Fairfax County Chamber of Commerce also voted to officially oppose the river route in favor of the inland location.¹⁷⁴ In addition to these public expressions of disapproval the BPR received a flurry of protests including photographs documenting the unsightly conditions at Potomac Yards and a crudely drawn cartoon portraying a balance beam weighing the relative merits of the two routes (Figure 73). The inland route's advantages were said to include "thrilling view of Washington from Arlington Ridge," "picturesque green valley," "shortest route," "solid ground," and "less cost." The river route's characteristics were all negative: "miles longer," "miles of swamps," "smoke from industries," "filled ground," "dumps," "brick yards," "fertilizer factory," "mosquitos and fog," "costs more," and "scenic smells at low tide." Since the upper route's advantage outweighed those of the river route in the cartoonist's estimation, stick figures representing the BPR, the NCP&PC, the Commission of Fine Arts, and "real estate owners," were shown hanging from the river-route side of the balance to tip the scales in its favor. The BPR, of course, countered that inland route proponents were the ones who wanted to capitalize on inflated real estate prices along the development corridor. The BPR produced a real estate brochure touting the memorial highway's impact on land values to bolster its argument about the selfish motives of inland route proponents.¹⁷⁵

¹⁷¹ "New Mt. Vernon Route. Writer Points Out Shorter Boulevard, Which Would Cost Less," [letter from James E. Johnson to the editor] Washington Evening Star, 3 February 1927; similar sentiments were expressed in "Ridge Route Preferable for Mount Vernon Boulevard," [letter from James Johnson of Urbana, Ill., to the editor], Washington Evening Star, 7 February 1927.

¹⁷² "Western Route Favored," [letter from Blanche C. Howlett to the editor] Washington Evening Star, 18 February 1927.

¹⁷³ "Boulevard Route On River Opposed," Washington Evening Star, 8 June 1928.

¹⁷⁴ Letter, Margaret Vosbury, secretary, Fairfax County Chamber of Commerce to E. W. James, chief, BPR Division of Design, 25 August 1928 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

¹⁷⁵ Cartoon, list, and real estate development brochure "Jefferson Park: A Gem of Nature" in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives. The assertion that economic self-interest was the primary motivation of inland route advocates was made most explicitly in Gilmore Clarke's "Mount Vernon Memorial Highway," Landscape Architecture (April 1932), 180.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 77)

The BPR conducted additional studies of the riverfront route, and Congressman R. Walton Moore continued to promote the project in preparation for another attempt to secure funding and authorization. In 1928 Moore and Virginia Senator Claude Swanson introduced parallel legislation calling "for the construction of a memorial road leading from the Capital to Mount Vernon," stressing the need for immediate action in order to ensure completion in time for the bicentennial. The Swanson-Moore bill significantly increased the estimated cost of the memorial highway, seeking \$4.5 million for the project, with \$500,000 to be made available for the current fiscal year, \$2 million for 1929, \$1 million for 1930, and \$1 million for 1931. The legislation stipulated that the U.S. Commission for the Celebration of the Two Hundredth Anniversary of George Washington's Birth would oversee the project, and directed the Secretary of Agriculture to provide surveys, plans, and specifications for the highway and to supervise land acquisition, construction, and landscape development. Granting authority to the bicentennial commission was a means of generating widespread support for the project and countering lingering assertions that the highway was a local rather than a national concern. The bicentennial commission would also make the final decisions on the highway's location and design, though there was little doubt that the river route was a foregone conclusion.¹⁷⁶

Despite the patriotic extravaganza of the approaching bicentennial, the memorial highway bill's passage was by no means guaranteed. When the House Committee on Roads took up the Swanson-Moore bill again in March 1928, avenue supporters pressed their cause with fervent determination. MacDonald and Moore introduced the detailed 1927 BPR report as evidence in the proceedings, with Moore noting that President Coolidge, the Bicentennial Commission, the Senate, and the Director of the Budget all endorsed the measure. Moore also submitted statements from the DAR and the George Washington Masonic National Memorial Association in support of the project. Warning that failure to construct a dignified highway in time for the bicentennial would embarrass America in the eyes of the world, Senator Swanson challenged, "Is there a man in the House and Senate who would not be ashamed to see the approaches that exist to-day to the home and tomb of Washington?"¹⁷⁷

The committee also considered basic design, financial, and jurisdictional issues. There was concern over whether the federal government had the authority to acquire land for highway construction in Virginia, and whether the federal government or the state of Virginia would be responsible for establishing regulations and policing the highway. Several committee members warned that landowners who had offered to donate property for the highway might not make good on their promises once the government was officially committed to the project.

¹⁷⁶ S. 1369, 70th Cong., 1st Sess., 1928; H.R. 4625, 70th Cong., 1st Sess., 1928; "Mt. Vernon Highway Bill Passes Senate," Washington Post, 7 March 1929.

¹⁷⁷ U.S. Congress, House Committee on Roads, Roads. Hearings before the Committee on Roads . . . on H.R. 4625 (70th Cong., 1st Sess., 27 March 1928); Moore, 578-81; Swanson, 587-93; Lowrey, 577.

MacDonald pointed out that federal ownership of much of the river route made it much less problematic in this regard. The legal and jurisdictional issues were not entirely clear, but MacDonald and Swanson insisted the federal and state governments could work out an agreement similar to those used to regulate traffic in national parks and on the government road to Arlington Cemetery. When queried on design matters, MacDonald was somewhat vague, suggesting that the roadway and landscape treatment would resemble other Washington-area park developments but refusing to commit to any specific development plans. MacDonald condemned the notion of engaging the states in a competitive embellishment program, advising that "the simple treatment of Rock Creek Park would meet more nearly the requirements of the situation." The committee approved the legislation as it stood and passed it on to a vote of the full House without demanding any further elaboration of the design treatment, route location, or jurisdictional issues.¹⁷⁸

The committee's unanimous endorsement did not prevent the memorial highway bill from encountering opposition in the House. Objections were raised to the project's overall cost, to the precedent it might set for using memorial designations to channel federal funds into local road-building projects throughout the country, and to the propriety of honoring Washington with a highway as opposed to more conventional commemorative gestures. Led by Congressman Louis Cramton, advocates of a broader proposal to preserve both banks of the Potomac River from Mount Vernon to Great Falls opposed the memorial highway project as a threat to their own aims. Casting the larger Potomac River park project in a regional framework, Cramton condemned the memorial highway as a pork barrel project "for local benefit, for one section of one State, the most extravagant piece of road building that this country has ever known." Cramton also criticized the BPR's formal bridge designs and development proposals as needlessly elaborate compared to the simple resource protection agenda he advocated.¹⁷⁹ On the other side of the argument, Moore and his associates repeatedly recounted the project's patriotic significance and cast the highway as a civic duty.¹⁸⁰

Missouri Congressmen Ralph Lozer countered that the rhetoric of civic virtue was "a mere cloak to direct attention away from the palpable fact that this bill is nothing more or less than a raid on the National Treasury for the benefit of a few people who live in Virginia along or near this proposed American Appian Way." Lozer attacked the project as a "prodigal expenditure" that proclaimed that the memorial highway would be "the most extravagant" road ever built. Lozer insisted that local taxpayers and the State of Virginia should pay for the project, since they were the ones who would principally benefit from it. Any federal support should be channeled through existing funding measures for highway development, such as the Federal

¹⁷⁸ Roads. Hearings before the Committee on Roads . . . on H.R. 4625, 602-08.

¹⁷⁹ "Congressional Record Report of Mt. Vernon Boulevard Bill," Alexandria Gazette 22 May 1928.

¹⁸⁰ "Memorial Road Proposal Passed," Washington Evening Star, 22 May 1928.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 79)

Aid system already in place. Many in Congress felt it was a dangerous precedent to begin granting special appropriations for memorial highways, since every state would soon be demanding federal assistance for "commemorative" roads.¹⁸¹

Despite these objections, Congress voted in favor of the Swanson-Moore bill by a margin of 177 to 61, and the measure was officially approved on May 23, 1928.¹⁸² The press celebrated this victory, recounting the project's lengthy history and hailing the memorial avenue as a practical necessity and a great patriotic accomplishment (Figure 74). The Evening Star congratulated Congress for honoring Washington and the American people, crediting the bicentennial spirit, the imminent completion of the Memorial Bridge, and the "awakened consciousness throughout the land" of the need to improve the appearance of the nation's capital with making "this dream of half a century a reality and a blessing for generations to come."¹⁸³ The Post and the Washington Herald similarly applauded the bill's approval. The Post predicted the memorial highway would be "one of the finest drives in the world, stretching through national history and giving the National Capital another monumental entrance."¹⁸⁴

While the BPR began assembling a design team and preparing plans for the parkway's development, the bicentennial commission continued to delay its decision on the roadway's location. Finally, on January 25, 1929, after reviewing another BPR report favoring the river route, the commission announced that the memorial highway would follow the river route recommended by the BPR and other planning agencies (Figure 75).¹⁸⁵ This news produced a flurry of articles attesting to the memorial highway's historic associations, patriotic significance, recreational opportunities, and status as vital contribution to the success of the bicentennial celebration. The newspapers borrowed heavily from an official BPR press release

¹⁸¹ "Mount Vernon Memorial Highway. Extension of Remarks, Hon. Ralph F. Lozer of Missouri," Congressional Record May 21 1928, p. 10435-6 (quotes. p. 10436); "Congressional Record Report of Mt. Vernon Boulevard Bill," Alexandria Gazette 22 May 1928.

¹⁸² Public No. 493, 70th Congress, "An act to authorize and direct the survey, construction, and maintenance of a memorial highway to connect Mount Vernon, in the State of Virginia, with the Arlington Memorial Bridge across the Potomac River at Washington"; "Memorial Road Proposal Passed," Washington Evening Star, 22 May 1928.

¹⁸³ "The Mount Vernon Boulevard," Washington Evening Star, 22 May 1928.

¹⁸⁴ Mount Vernon Bill Passes House," Washington Herald, 22 May 1928; "Great Boulevard to Mount Vernon Soon to Be Begun," Washington Post, 27 May 1928.

¹⁸⁵ Bureau of Public Roads, "Report on Alternative Routes for the Proposed Memorial Highway, Washington, D. C. to Mount Vernon, Virginia," typed manuscript dated January 1929, in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 80)

to recount the project's history, extol the patriotic resonance of the historic sites along its route, and assure the public that, as the Washington Post put it, the memorial highway would soon become the "Most Beautiful Road in the World." Both the Post and the Evening Star observed that construction of the memorial highway, together with the completion of the long-delayed Rock Creek and Potomac Parkway, would enable motorists to drive all the way from Mount Vernon through Washington and Rock Creek Park to Maryland, providing the nation's capital with "one of the most noted and beautiful drives in the world."¹⁸⁶

¹⁸⁶ "Mt. Vernon Boulevard Will Take the River Route; President Coolidge and the Commission Approve Route Selected by the Executive Committee Tuesday," Alexandria Gazette, 24 January 1929; "George Washington Memorial Boulevard Will Be Most Beautiful Road in World," Washington Post, 27 January 1929; C. Moran, "Road To Mount Vernon Soon To Be A World-Famous Highway," Washington Evening Star, 17 February 1929; most of the basic facts and a considerable component of the actual prose of these articles came directly from "Broad Highway to Mount Vernon, Suggested More than Forty Years Ago, Will Soon be A Reality," U.S. Department of Agriculture Office of Information press release, 25 January 1929 (in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

MOUNT VERNON MEMORIAL HIGHWAY: THE DESIGN PROCESSGetting Started

Westchester County Park Commission parkway experts Gilmore Clarke, Jay Downer, and Wilbur Simonson are conventionally credited as the primary designers of Mount Vernon Memorial Highway. WCPC personnel undeniably played a prominent role in determining the parkway's final form, but the project's basic characteristics were articulated by the time these individuals became involved with the project in the summer of 1929. BPR engineers had thoroughly studied the matter for several years in conjunction with the CFA, the NCP&PC, and other outside experts, establishing the parkway's general location and outlining most of the fundamental design considerations that determined its basic configuration. BPR engineers were trained primarily in the techniques of utilitarian highway construction, but many possessed at least passing familiarity with traditional parkways such as those in Boston, Chicago, and Kansas City. The Westchester County approach also exerted a strong influence on the project even before Clarke, Downer, and Simonson became officially involved. Detailed accounts of Bronx River Parkway and other Westchester County developments were appearing in the popular and professional press by the mid 1920s and would undoubtedly have been noted by BPR engineers. Nevertheless, the BPR's initial landscape design sketches were demonstrably outdated and amateurish, calling for regularly spaced rows of conventional street trees flanking a traditional formal boulevard (Figures 76-77). Proposed bridge treatments were equally formal and unimaginative (Figures 78).¹⁸⁷

The BPR apparently recognized the inadequacy of these proposals and briefly considered calling in National Park Service landscape architects to help with the memorial highway's design, since the two agencies had been collaborating in the development of roads in the national parks since 1926. The park service was part of the Department of the Interior, however, and the memorial boulevard legislation stipulated that the memorial highway was to be a Department of Agriculture project. There were other, less openly discussed, reasons other for avoiding park service involvement at this stage of the project. While park service landscape architects were becoming increasingly adept at designing roads in national parks, none had significant experience in the development of urban or suburban parkways, which generally bore much heavier traffic burdens and involved more intensive design of the

¹⁸⁷ "Plan of the Mount Vernon Boulevard, Showing Proposed Layout of Highway, Bridges and Drives, Dec. 14, 1926 (Bureau of Public Roads Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1403, Record Group 30, National Archives); "Mount Vernon Boulevard, Typical Cross Sections, U.S. Department of Agriculture, Bureau of Public Roads, January 4, 1927," accompanying U.S. BPR, "Report on Alternate Routes For Mount Vernon Memorial Highway, Bureau of Public Roads, 1929," (Bureau of Public Roads Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1403, Record Group 30, National Archives).

immediate roadside landscape. The checkered history of the national capital park system provided additional reasons for avoiding park service participation at this stage of the project. Pointing to the perennially underfunded condition of the national capital parks, NCP&PC director U.S. Grant III advised the BPR to retain full authority for the project until a more satisfactory manner of managing D.C. parks could be developed.¹⁸⁸

Since the BPR itself had little practical experience in parkway construction, Division of Design Chief E. W. James organized an inspection trip of prominent East Coast parks and parkways in late summer 1928. The itinerary included Valley Forge State Park, Fairmount Park, Roosevelt Boulevard, and Wissahickon Parkway in Pennsylvania; Palisades Interstate Park, Bear Mountain Park, and the Bronx River and Westchester County parkways in New York; and the Boston Metropolitan Park System and Springfield's Forest Park in Massachusetts. The BPR also examined the approaches to the new suspension bridge between Philadelphia and Camden for ideas on how to solve the expected traffic problem where the memorial highway was to intersect with the approach to Washington's Fourteenth Street Bridge. The BPR engineers were unimpressed with the bridge designers' solution, which was a mixture of simple traffic circles and fan-shaped plazas, both of which were prone to accidents and congestion. Bear Mountain Bridge provided additional lessons in what to avoid, as the approach roads wound about in dangerously circuitous alignments. The BPR reported that both Roosevelt Boulevard and the roadways in Fairmount Park underscored the inadequacy of traditional approaches to parkway and park road development. Roosevelt Boulevard's formal cross section and lack of grade separations presented a classic illustration of "what should be avoided in parkway design." Fairmount Park was similarly condemned for the absence of grade separations at major intersections. The BPR dismissed Boston's renowned parkway system on the same grounds. The BPR had little to say about the roads in Springfield's Forest Park, but the artistic development of water basins and associated landscapes provided some useful ideas for the rehabilitation of the Potomac waterfront between Washington and Alexandria. The general landscape effects of most of these traditional parks strongly influenced the overall landscape

¹⁸⁸ The BPR's solicitation of Olmsted, Olmsted's refusal, and Downer's acceptance are chronicled in a series of telegrams and telegrams between BPR Chief MacDonald and the two men sent between May 6-13, 1929; Grant to Delano, 31 January 1928 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives). For contemporary accounts of the NPS-BPR collaboration from the NPS and BPR perspectives respectively, see Stephen T. Mather, "Engineering Applied to National Parks," Transactions of the American Society of Civil Engineers 94 (1930), 1181-93; and L. I. Hewes, "America's Park Highways," Civil Engineering 2 (September 1932): 537-40. For more information on the 1926 NPS-BPR memorandum of agreement and NPS park road design practices in this period, see Linda Flint McClelland, Presenting Nature: The Historic Landscape Design of the National Park Service, 1916-1942 (Washington, D.C.: Interagency Resources Division, National Register of Historical Places, National Park Service, U.S. Department of the Interior, 1993), 102-112.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 83)

character of the memorial highway, but BPR engineers rejected conventional traffic circulation patterns on the grounds of safety and efficiency.¹⁸⁹

As far as the BPR was concerned, the best model for the memorial highway was the Bronx River and Westchester County parkway system. The BPR reported that the system's excellence stemmed from the fact that it was conceived from the outset as a series of arterial highways rather than as a picturesque recreational landscape. This was not exactly true, since the Bronx River Parkway was conceived initially as a landscape reclamation and pollution abatement project and the renowned motor road was actually an afterthought, but once the determination was made to include a major motorway, landscape architects and engineers had produced exactly the sort of professional collaboration and harmonious results that the BPR sought to promote through the development of Mount Vernon Memorial Highway.¹⁹⁰

The BPR was impressed by the WCPC's harmonious integration of engineering concerns and landscape art. Avoiding lengthy tangents and conforming the roadbed to the existing terrain by building around rather than through obstacles not only produced a more attractive integration of highway and landscape, it reduced expensive cuts and fills and minimized the unsightly scars that characterized most conventional highway construction. Where excavations were unavoidable, the WCPC widened cuts to reduce the gradient of slopes, and sculpted the final contours to resemble natural conditions and merge imperceptibly with the surrounding terrain. A similar philosophy guided the WCPC's planting and forestry practices. Existing vegetation was preserved whenever feasible, especially in the case of mature specimen trees--which were often spared by judicious roadway alignment. New plantings were grouped as naturalistically as possible and made up of native species rather than exotic ornamentals. Most of the trees and shrubs used in parkway landscaping were transplanted from the construction path or gathered from surrounding woodlands. Keeping in mind the challenge of converting the marshy Potomac shoreline into useable parkland, BPR engineers paid particular attention to the WCPC's techniques for rehabilitating wetlands through dredging, draining, filling, and channelizing. They also took note of the WCPC's construction and management policies, observing the accelerated schedule of construction and landscaping activities that enabled the commission to progress from rough grading to finished roadways surrounded by completed plantings in just two seasons. With the 1932 bicentennial celebration rapidly approaching, the perfection of this "fast-track" construction process would be vital to the success of Mount

¹⁸⁹ U.S. Bureau of Public Roads, "Information Trip to Prominent Parks and Parkways," typed report dated August 25 to September 6, 1928, quoted pp. 1, 2 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

¹⁹⁰ "Information Trip to Prominent Parks and Parkways," 3-4; Gilmore Clarke provided a more informed synopsis of the Bronx River Parkway in "The Parkway Idea," in The Highway and The Landscape, ed. Brewster Snow (New Brunswick, N. J.: Rutgers University Press, 1959), 32-55.

Vernon Memorial Highway. The BPR also made extensive notes on WCPC bridge construction, though as it turned out, the WCPC's Gilmore Clarke wound up designing the elevations of all of Mount Vernon Memorial Highway's bridges.¹⁹¹

Before Clarke and his colleagues were officially invited to participate in the design process, however, the BPR continued to refine its plans for the parkway's development. The January 1929 report that sealed the river route's approval provided a basic outline of the BPR's design scheme. In addition to specifying the general alignment, the report called for a 200' right-of-way encompassing a 40' wide roadway with 10' shoulders for emergency parking. While most of the roadway would be undivided, the BPR proposed several lengthy divided segments. The first would extend from Roaches Run to Four Mile Run, where north- and south-bound lanes would be separated by a varying width median that broadened to 80'-wide where the two roadways wound around the modest hill then known as the site of Abingdon house and now serving as part of the National Airport complex. Additional divided sections were proposed at Fort Hunt and near Belle Haven. Specially designed parking facilities were proposed for the Mount Vernon terminus and for Fort Hunt and Abingdon. The BPR had worked out the basics of the Mount Vernon terminus design at this point, and was already calling for a large loop with pavement widenings in front of the main entrance to enable vehicles to drop off passengers before proceeding to the parking facilities. The BPR made was still making only vague recommendations for landscape development, but the report addressed the treatment of bridges and grade separation structures in some detail. The governing principle was that these structures should "fit the topography and be in accord with the landscape and character of the highway." The most striking difference between the BPR's proposals and the design eventually adopted was the desire to make the parkway bridge over Boundary Channel a classically designed structure that would harmonize with Arlington Memorial Bridge and mirror the similarly scaled bridge located along the formal approach Arlington Cemetery. In keeping with the desire to maintain a relatively formal appearance in this area, finished granite facings were suggested for the RF&P railroad bridge abutments. The remaining bridges would be reinforced concrete structures faced with brick or rough-cut granite.¹⁹²

Conscious of the need to move forward rapidly on the project, a committee of BPR engineers consisting of R. E. Toms, J. W. Johnson, and J. T. Voshell conducted a thorough review of existing plans and made a series of suggestions aimed at getting the work started as quickly and efficiently as possible, presenting their report to BPR Chief MacDonald on April 30, 1929.

¹⁹¹ "Information Trip to Prominent Parks and Parkways," 4-8.

¹⁹² U.S. Bureau of Public Roads, "Report on Alternate Routes for the Proposed Memorial Highway, Washington, D.C. to Mount Vernon, Virginia, January 1929," 15-18, 22-23 (Bureau of Public Roads, Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1400, Record Group 30, National Archives).

One of the most significant recommendations was to eliminate the divided roadway segments. James had already expressed concern that trying to fit double roadways within the parkway right-of-way would require excessive alteration of the existing terrain and result in the destruction of too much desirable woodland. All three engineers agreed that the idea was unwise, especially in places where the parkway corridor was only 200' wide. The belief that two 30' one-way roadways were needed to replace one 40' two-way roadway definitely contributed to the rejection of the divided parkway idea. The engineers suggested it might be possible to get by with two 20' wide roadways on the less heavily trafficked portion between Alexandria and Mount Vernon. If the proposed divided highway segments had been built, they would have represented a notable advance in parkway design as far as traffic circulation was concerned, but they would have taken up so much of the right-of-way that the road would have been less of a classic parkway and more of a minimally landscaped express highway. The committee generally approved of the earlier report's alignment, but recommended it be fine-tuned through detailed field study to take advantage of subtle variations in terrain and preserve distinctive trees along the proposed route. The committee also advised that spiral transition curves be employed throughout and that major curves be superelevated to ensure safety at speeds of 30 miles per hour. The general grading plans should be geared toward balancing cuts and fills to produce an harmonious appearance and minimize the need to import or dispose of excavated material. A relatively flat, 2 to 1 slope ratio was presented as ideal for the final grading of the parkway's borders, though 4 to 1 was common in ordinary highway construction at the time. This was another clear application of contemporary parkway design principles, which were also evident in preliminary suggestions for the memorial highway's basic circulation features. Casting the parkway's intersection with Route 1 traffic coming from the Highway Bridge and the Mount Vernon terminus as the project's most complex traffic circulation problems, the engineers advised that every effort should be made to eliminate cross-traffic and the need for left hand turns. They urged the construction of large-scale models of these areas to aid in the design process and help communicate the results to the public. The engineers also recommended the construction of grade separation structures at Fort Hunt and at the proposed site of National Airport in order to accommodate future traffic demands.¹⁹³

After submitting their report to MacDonald, Toms and Johnson took NCP&PC secretary Charles Eliot II on a tour of the proposed development. Eliot made a few minor suggestions about design and traffic circulation matters but was primarily concerned that the BPR take additional measures to ensure that key areas bordering the parkway be protected against future

¹⁹³ Committee of District Engineers designated to examine plans for Mount Vernon Memorial Highway, "Memorandum to the Chief of Bureau, April 25, 1929" (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives). James informed the NCP&PC in February 1929 that the BPR was reconsidering the dual roadway plans to avoid cutting down trees that contributed to the parkway landscape (James to Charles Eliot, 2nd, 21 February 1929, Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1386, RG 30, National Archives).

encroachments. Eliot strongly advocated the acquisition of all remaining land parcels between the authorized parkway borders and the river front, except in Alexandria and the suburbanized areas around Wellington, where preexisting development made land acquisition costs exorbitant. He urged the government to purchase several tracts of riverfront land between Washington and Alexandria belonging to the Smoot Sand & Gravel Company and the RF&P and Southern railroads, which posed a serious obstacle to the development of the waterfront park in this area. Eliot maintained that acquisition of the old Arlington Amusement Beach and the private marina just south of the Highway Bridge was also essential to the development of attractive waterfront park features across from Washington's monumental core, as was securing the rights to the shoreline portion of Hoover Field where it abutted Boundary Channel. Eliot recommended that the federal government purchase a strip of land on the west side of the highway containing the derelict shell of Abingdon house, which parkway planners hoped to restore and turn into a wayside attraction. The RF&P Railroad owned this property, but had exhibited little interest in maintaining the historic structure. The mantel, windows, and portions of the cornice had already been removed and the house was rapidly succumbing to the elements. The RF&P had tried unsuccessfully to interest patriotic societies in dismantling the remains of the house and moving it to a safe site, but had lost interest in the project and was already in the process of excavating the hill on which it stood to expand the railroad facilities at Potomac Yards. The BPR had long touted the Abingdon mansion as the primary historic attribute of the riverfront route, but was unable to acquire the structure in time. It burned to the ground in 1930.¹⁹⁴ South of Alexandria, Eliot advised expanding the parkway boundaries to include available undeveloped land in the Bel Haven area and acquiring several outstanding tracts between the roadway and the river south of Wellington. In addition to expanding the parkway's boundaries through donation, purchase, or condemnation, Eliot recommended that the BPR investigate the possibility of securing restrictive easements on adjoining properties to provide further protection against incompatible development. He noted that Westchester County and the Boston metropolitan park commissions had successfully employed such legal devices to restrict the character and height of adjacent development, protect viewsheds and establish building setbacks, and regulate vehicular access to the main parkway drive. Eliot endorsed the BPR's proposal for divided roadways south of Wellington as both safer and more attractive than conventional undivided parkway construction, and

¹⁹⁴ BPR engineer Shoemaker noted Abingdon's deteriorating condition in a memo to Wilson, 13 February 1928. RF&P president Eppa Hunton, Jr. informed Wilson of the company's plans for the site in a letter dated 15 February 1928; Hunton advised that the mantels had been saved but that the other elements had been scattered or destroyed. (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives). The vandalized structure burned to the ground in a brush fire during March 1930 (Letter, Wilson to R. Walton Moore, 6 March 1930, Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives).

advocated the use of border roads at Wellington and along the approaches to Alexandria as a means of eliminating undesirable cross traffic.¹⁹⁵

The Design Team

By May 1, 1929, the BPR was eager to proceed. The BPR was confident in its ability to handle the basic engineering issues and oversee the bidding, contracting, and construction process, but decided to engage outside consultants with demonstrated expertise in parkway design. BPR Chief MacDonald turned first to Frederick Law Olmsted, who had played a prominent role in the development of parkways in the national capital region and other cities throughout the country. On May 6, 1929 MacDonald wired the Olmsted firm's office in Brookline, Massachusetts to inquire about his interest in supervising the landscape development of Mount Vernon Memorial Highway. McDonald warned Olmsted that they were under considerable pressure to finalize plans as soon as possible and needed "immediate assistance." Olmsted declined MacDonald's request, explaining that health reasons prevented him from taking on the job himself and that the other members of his firm were currently too busy to render assistance. Even before getting an official letter of refusal, MacDonald telegraphed the WCPC's Jay Downer, who agreed to take on the project immediately. WCPC personnel and WCPC design methods dominated the landscape design process, and the project is rightly considered the crucial link between parkway design and modern highway development. By introducing sophisticated parkway design principles to the federal highway building establishment, the BPR-WCPC collaboration had a profound impact on subsequent parkway projects such as Blue Ridge Parkway and Natchez Trace, as well as on more utilitarian modern highway development practices at a national and even international level.¹⁹⁶

MacDonald assembled the basic design team by the end of May 1929, combining BPR personnel with landscape architecture experts from the WCPC (Figures 79-80). R. E. Toms assumed overall direction of the project as principal engineer. BPR District Engineer Junius W. Johnson was in charge of basic engineering and construction matters. A 1901 graduate of the Colorado School of Mines, Johnson had extensive experience in highway construction in New Mexico and Colorado. He was chief engineer for the BPR's Denver District when the agency called him to Washington in April 1929 to begin work on the project. As chief

¹⁹⁵ Charles W. Eliot II, "Notes Re Mt. Vernon Memorial Highway: Investigation of May 6 and May 8, 1929, in company with Messrs. Toms, Johnson, and Brown of the Bureau of Public Roads," in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1928-40, Box 1396, RG 30, National Archives).

¹⁹⁶ It is possible that Olmsted could have recommended that the BPR consult WCPC experts, as one of his telegrams to MacDonald refers to a previous message of which no record exists in which he discussed "several other competent advisors" and remarked that he had already asked them to provide assistance. (Letters and telegrams between MacDonald, Olmsted, and Downer, dated 6-13 May and 25 July 1929, in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 88)

engineer for the Denver District, Johnson helped oversee the BPR's collaboration with the NPS in park road construction, but was not closely involved with the details of road construction projects in the individual parks. BPR Senior Bridge Engineer J. V. McNary was responsible for the technical aspects of bridge design and construction. Clarke and Jay Downer agreed to consult on a per diem basis while remaining employees of the WCPC, which was in the middle of an ambitious program of park and parkway development of its own. Clarke and Downer soon realized that their WCPC commitments prevented them from spending the amount of time on site necessary to ensure optimum landscape development, and persuaded McDonald to hire their assistant Wilbur Simonson on a full-time basis as the project's Senior Landscape Architect. Simonson had worked extensively for Clarke and Downer as supervisor of construction for the development of Saw Mill River Parkway and Hutchinson River Parkway. Downer's letter in support of Simonson's appointment praised his "extensive all-around experience on both design and construction" and characterized him as "one of our very best designers and field men."¹⁹⁷ As the senior on-site landscape architect Simonson was responsible for day-to-day design matters and deserves a large degree of credit for the parkway's overall appearance. The BPR also employed a fourth WCPC staff member, landscape plantsman Henry Nye, to aid in the completion of planting plans and oversee the details of the planting process. Nye had served as Charles Sprague's assistant at the Boston Arboretum, worked for the Olmsted firm on numerous projects, and served in a similar capacity for the WCPC. Downer initially proposed adding architect Charles Stoughton to the design team, since Stoughton had provided the architectural treatments for many WCPC bridges, but Clarke also viewed himself as a parkway bridge expert, and took charge of this aspect of the project as well. While Clarke and Simonson handled the broader aspects of the parkway's design, Nye was responsible for the detailed arrangement and care of plants, shrubs, and trees along the memorial highway. He was assisted by junior landscape architect George G. Holley, who served as field supervisor for planting operations, and forestry foreman Paul W. Day, who focused on improving existing forest growth and tending to the removal and transplanting of larger trees. The design team set up its operations in the old

¹⁹⁷ MacDonald, "Memorandum re: Organization, Design and Construction of the Mt. Vernon Memorial Highway," 1 May 1929, Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives; Letters, Downer to MacDonald, 15 May 1929; MacDonald to R. W. Williams, solicitor, Department of Agriculture, 28 May 1929; Bureau of Public Roads Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1401, Record Group 30, National Archives. Biographical information of Johnson is from "Memorial Highway Builder Expires," Washington Evening Star, 31 May 1933. Simonson's educational background and employment on Saw Mill and Hutchinson River parkways noted in EDAW, Inc., "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 1. History," (Prepared for National Park Service/National Capital Region, n.d.), 42.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 89)

Navy torpedo station building on the Alexandria waterfront, where they had ready access to the parkway and ample room to work with large-scale drawings and models.¹⁹⁸

Clarke traveled to Washington in the middle of May 1929 to meet with BPR engineers, examine the parkway plans, and inspect the terrain. He concluded that the preliminary design work prepared by the engineers was generally satisfactory, though additional refinements were necessary when it came to locating the actual line of the highway and developing the subtleties of the landscape treatment. Clarke directed Simonson to inspect the terrain at greater length, study the engineer's proposed center line and grading profiles, and fine-tune the layout on the ground with stakes at 50' intervals. Clarke approved the locations and general forms of most of the BPR's bridge proposals, but objected to their "fussy" detailing and brick veneers. He recommended a simpler, more rustic surface treatment relying largely on random-laid rough-cut stone and included drawings of several WCPC bridges as illustrations of appropriate parkway bridge treatments. To underscore the importance of close cooperation between architects and engineers in parkway bridge design, Clarke sent MacDonald copies of a 1923 Architectural Forum article on collaborative bridge design he had co-authored with WCPC deputy chief engineer Leslie G. Holleran.¹⁹⁹ Clarke also objected to the 60' wide single-span grade separation structures proposed by the BPR to carry the RF&P Railroad and Highway Bridge traffic over the parkway. Spanning this distance would require the use of steel girder or truss construction rather than the more modest reinforced concrete arches preferred by parkway designers. Replacing the undivided 60' wide roadway with two 40' roadways divided by a 10' wide median would not only be safer, it would enable the BPR to construct two shorter arched spans with more harmonious proportions. Clarke also recommended that Hoover Airport, located just north of the Highway Bridge on the Virginia side of Boundary Channel, be closed and included in the parkway reservation. Other significant recommendations included the purchase of a 200' wide strip north of Alexandria to preclude incompatible development, together with the construction of border roads to absorb side-street traffic and channel it into carefully regulated entranceways. Clarke also proposed a traffic circle on the south side of Alexandria to provide a more effective connection for traffic using Route 1. Clarke promised to come down and inspect Simonson's field alignment and asked

¹⁹⁸ Nye's background and association with MVMH described in Clarke to Toms 7 July 1931; Toms to Clarke, 27 January 1932 (Bureau of Public Roads Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1401, Record Group 30, National Archives); Memo, Toms to MacDonald, 13 February 1932 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives); and Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report: The Landscape Architectural Problems in its Development," U.S. Bureau of Public Roads, U.S. Department of Agriculture, 1932), 145-46; information on additional landscape staff in Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 92-95.

¹⁹⁹ Gilmore Clarke and Leslie G. Holleran, "Collaboration in Bridge Designing," Architectural Forum 48 (May 1923), 729-38.

MacDonald to send a copy of an aerial photo map of the area to the WCPC's Bronxville office along with photostats of topographic surveys at a scale of 100'-1" so that he could study the matter further and that Simonson and he could compare notes as the project progressed.²⁰⁰

The WCPC cooperated wholeheartedly with the BPR throughout the MVMH project, furnishing sample planting plans, diagrams for curbs, drainage features, lighting fixtures and guardrails, additional deed, contract, and easement forms, hosting inspection trips for BPR personnel, and consulting both informally and on a contractual basis. Clarke inspected the parkway development on a regular basis and Toms traveled to Westchester at least one more time to observe WCPC practices. MVMH bridge engineer J. V. McNary also went to Westchester to inspect WCPC parkway bridges and confer with WCPC bridge expert Arthur G. Hayden.²⁰¹

Special Design Concerns

While WCPC personnel and design principles played a dominant role in the design process, and the parkway is in many ways a mirror image of its Westchester contemporaries, the MVMH design team confronted a number of technical, aesthetic, and symbolic considerations that were specific to the highway's unique location and commemorative function. Foremost among these concerns, of course, was the parkway's memorial status, which significantly influenced the design and construction process, the parkway's final form, and the ways in which it was presented to both popular and professional audiences.

On a purely pragmatic level, the decision to route the highway across the swamps, estuaries, and creek mouths of the Potomac riverfront posed a series of engineering challenges that differentiated it from the Westchester County parkways, which were generally built on solid foundations in the stream valleys extending north from New York City. The shoreline location necessitated an extensive land-filling operation to provide a stable base for the roadway and

²⁰⁰ Clarke summarized the results of his May 19-21 inspection trip in "Parkway - Washington, D.C. to Mt. Vernon, Va." unpublished report to Jay Downer dated 24 May 1929, in Bureau of Public Roads Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1401, Record Group 30, National Archives. Clarke mentioned the need for truss or girder construction to span the 60' wide roadway in "The Mount Vernon Memorial Highway," 187.

²⁰¹ Toms to Downer, 24 July 1930 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives); Downer refereed to McNary's visit to Hayden in a telegram dated 4 September 1929; Toms to Clarke, 24 July 1930 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1925-40, Box 1401, RG 30, National Archives). Downer sent Toms specifications and drawing for basic paving, curb, and drainage features, along with sample contracts on 14 August 1929 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

produce the spacious riverfront park areas called for in the ambitious development plan. Approximately two and three-quarter miles of the parkway were constructed on land reclaimed from the Potomac River by pumping sand and gravel from the bottom of the river. This "hydraulic fill" was secured within rip-rap walls configured to produce an entirely artificial but seemingly naturalistic shoreline. Close to five million cubic yards of material were deposited in this manner. Engineering News-Record reported that this represented the most extensive use of hydraulic fill in any highway project to date.²⁰² The biggest landfilling operation occurred in the Columbia Basin area between Boundary Channel and Gravelly Point, where the shoreline was extensively reconfigured to act as a continuation of Columbia Island--itself a largely artificial creation--and at Great Hunting Creek south of Alexandria, where a lengthy causeway eliminated the need for a major span across the broad creek mouth. Considerable landfilling was also needed between Gravelly Point and Dangerfield Island, and a shorter section of hydraulic fill was employed at Little Hunting Creek. The BPR was under enormous pressure to complete these operations as quickly as possible in order to give the filled land a sufficient interval to settle and solidify so that the actual road construction and landscape development process could begin in time to assure completion of the memorial highway by the onset of bicentennial festivities in February 1932. The unstable fill and muddy creek bottoms also caused problems for the bridge engineers, who were forced to drive deep pilings to provide adequate footings and tie the abutment foundations together with timber struts to counter distorting thrusts that might be produced as the structures settled.²⁰³

The accelerated construction schedule also had a significant impact on the landscape architects' development plans. The need to produce a completed and seemingly natural landscape with almost no interval between the completion of basic construction activities and the opening of the highway to bicentennial tourists forced the landscape architects to pay exceptional attention to the conservation of existing scenic resources and the introduction of new plantings that would rapidly harmonize with surrounding growth. This was accomplished by taking unusual care to wind the parkway drive around attractive pre-existing trees and by relying heavily on native trees and shrubs gathered from the surrounding countryside or transplanted from the path of the motorway. Both native and nursery transplants were often larger than normally used in public landscaping projects in order to foster the impression that the parkway was a natural landscape. Considerable effort was also put into improving existing tree growth through selective cutting, pruning, and other forestry techniques. The landscape architects also

²⁰² "A Notable Highway," [editorial], Engineering News-Record 107 (July 23, 1931), 122.

²⁰³ These features were singled out as noteworthy in "The Mount Vernon Memorial Highway," Engineering News-Record 107 (July 23, 1931), 127. Cross-bracing bridge abutments with subsurface lateral struts may not have been particularly common in the 1920s, but the practice was employed as early as the 1880s in the construction of highway bridges on similarly unstable soils (see James Owen, "Highway Bridges," Transactions of the American Society of Civil Engineers 11 (August 1882), 281, pl. XXX).

insisted that the construction forces strip and stockpile topsoil before conducting their grading operations, replacing it after completion of paving and incidental features. This saved time and money and produced more attractive results from the landscape architect's point of view, but contractors accustomed to conventional highway construction techniques apparently found the practice burdensome.²⁰⁴

One of the most biggest problems confronting MVMH designers was the requirement that the memorial highway pass directly through the city of Alexandria. This violated one of the basic principles of parkway design: bypassing urban areas to limit grade-crossings and maintain safeguards against uncontrolled access and incompatible roadside development. The BPR and the City of Alexandria agreed that the memorial route should follow Washington Street, the city's main north-south thoroughfare. The Department of Agriculture and the City of Alexandria wrote up a memorandum of agreement to protect the street's historic character and improve its traffic-handling capacity. The city granted the federal government a perpetual easement to use Washington Street as a component of the memorial highway and agreed to prohibit all free standing billboards and other advertising signs from unimproved property within 200' of the memorial highway. The city also promised "to restrict the said street to residential and business development of such character and of such types of building as will be in keeping with the dignity, purpose and memorial character of said highway." Washington Street traffic was to be granted the right-of-way at all intersections. The city agreed to erect stop signs or signals to enforce this provision. The Department of Agriculture was granted authority to reconstruct and maintain Washington Street to conform with development of the highway outside the city's limits. The federal government would oversee construction activities and cover most of the costs of improving the roadway. The agreement stipulated that the city had to reimburse the federal government for one-quarter of the maintenance and construction expenses.²⁰⁵ Continued debates about the need to preserve the historic ambience of Alexandria in general and Washington Street in particular led the city council to pass an historic district act in February 1946. This legislation was patterned on Charleston, South Carolina's pioneering historic zoning ordinance of 1931, which set up a board of architectural

²⁰⁴ Simonson's "Final Report" contains a wealth of information on landscape design issues. Reference to the dominance of the time element appear on pages 8-10, 14, 92, 143; to the use of native plants and transplants: 11, 107, 127-29, 142; to tree planting and transplanting: 57-8, 127, 132. The illustrated version of Simonson's report provides additional insight into these practices; see plates 44-44E, 59F-59G, 69, 71. Engineering News-Record observed "Grading has been particular work because of the requirement for dressed and curved slopes and the separate excavation and stockpiling of topsoil" ("The Mount Vernon Memorial Highway," Engineering News-Record 107 [July 23, 1931], 127).

²⁰⁵ "Memorandum of Agreement between the City of Alexandria and the United States of America, represented by the Secretary of Agriculture, dated 20 June 1929," (copy obtained from National Park Service National Capital Region Land Use Office).

review to rule on proposed alterations to the city's historic fabric.²⁰⁶ The city's Confederate Memorial, which stood in the middle of Washington Street at the intersection with Prince Street, posed another problem. The monument consisted of a Confederate soldier, standing on a granite base that was surrounded by low shrubbery, a circular stone curb, and four ornate metal lampposts. This composition took up more than half of the intersection. The BPR insisted on eliminating, or at least easing, this traffic "bottleneck." The lampposts and original curbing were removed and replaced with a small island that allowed room for two lanes of traffic in each direction (Figure 81).²⁰⁷

Another pragmatic influence on the parkway's development was the pressure to complete the project in time for the onset of bicentennial festivities in February 1932. The limited time between the highway's authorization and the bicentennial celebration forced the BPR to employ a "fast-track" development process in which the various stages of construction were divided into separate units and carefully coordinated to ensure minimum lag-time between contracts and guarantee rapid completion of the entire project. The BPR was extraordinarily successful in this regard. While Washington's Rock Creek and Potomac Parkway took almost a quarter-century to complete, and the development of Bronx River Parkway dragged on for close to two decades, Mount Vernon Memorial Highway was authorized in May 1928, construction began in October 1929, and the road was opened to traffic in January 1932--though the final landscaping features were not in place until the following summer. The BPR was extremely proud of this accomplishment, asserting that "the timely completion of the Mount Vernon Memorial Highway exemplified an outstanding engineering achievement of unusual character and memorial permanence."²⁰⁸

The BPR considered the construction of a state-of-the-art modern motorway to be a monumental achievement in itself. While BPR officials repeatedly invoked the highway's memorial stature, the agency was primarily concerned with the memorial highway's status as a model of modern motorway development. After detailing the highway's status as a model of modern motorway design, landscape architect Simonson asserted, "The Mount Vernon Memorial Highway, therefore, through the coordination and blending of the science of

²⁰⁶ Charles B. Hosmer, Jr. discusses the Charleston and Alexandria historic district movements in, Preservation Comes of Age: From Williamsburg to the National Historic Trust (Charlottesville: University Press of Virginia for the Preservation Press, 1981), 232-74, 360-62.

²⁰⁷ Captioned before and after photographs of Alexandria's Confederate monument appear as plates 49 and 49A in Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report."

²⁰⁸ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 8-10, 49. Simonson's report claimed that the memorial highway opened to traffic on January 16, 1932. While some sections may have been opened to general traffic on a limited basis in January, various delays prevented the highway from opening on a full-time basis until later in the year.

engineering with the science of landscape architecture, was made appropriate and fitting as a national memorial in his honor."²⁰⁹ The BPR's perspective on the memorial highway's true significance was encapsulated in Simonson's observation that "The Mount Vernon Memorial Highway is the first comprehensive demonstration by the National Government of the fundamental principles involved in the design of the modern arterial highway."²¹⁰

The BPR's desire to transform the memorial highway project into a demonstration of modern highway design principles was evident in the agency efforts to document every stage of the development process and to disseminate information about the parkway's design and construction through articles in the popular and professional press, through the agency's own publications, and through tours conducted for organizations such as the American Concrete Institute and the American Association of State Highway Officials.²¹¹ In addition to using examples from Mount Vernon Memorial Highway to illustrate journal articles and roadside improvement treatises, the BPR produced a booklet on the memorial highway's history, design and construction in preparation for an inspection tour by the Sixth International Road Congress in October 1930. This publication was heavily requested by road building agencies, universities, interested individuals, and members of the press.²¹² The BPR compiled an extensive photographic record of the construction and landscaping operations to document its achievements and help popularize the memorial highway project.²¹³ These photographs were complemented by hundreds of plans and construction drawings and a series of exhaustively detailed reports on the various components of the project.²¹⁴

²⁰⁹ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 6.

²¹⁰ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," iii.

²¹¹ Both of these organizations scheduled their 1932 annual conferences to include a demonstration tour of Mount Vernon Memorial Highway (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

²¹² U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction (Washington, D.C.: Government Printing Office, 1930). Numerous requests for this book can be found in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives.

²¹³ Most of these photographs can be found in U.S. Bureau of Public Roads Prints, Highway Transport 1900-1953, General Photographs, Mount Vernon Memorial Highway, Boxes 240-259, Still Pictures Division, National Archives.

²¹⁴ These included Simonson's "Final Report," W. I. Lee's "Final Report for the Construction of the Mount Vernon Memorial Highway," which covered basic engineering features and construction processes, and additional reports on paving, lighting, bridge construction (see Simonson's bibliography; these reports can be found in the Mount Vernon Memorial Highway files of the Bureau of Public Roads, Classified Central File, 1912-50, RG 30, National Archives).

A Model Modern Motorway

The demonstration nature of the project, together with the time constraints imposed by the bicentennial celebration, focused attention on the design process itself. While the project did not employ any particularly revolutionary design methods or technical innovations, the speed and thoroughness with which the design team went about its business received considerable acclaim. Though Mount Vernon Memorial Highway did not break new ground on a technical or aesthetic level it served as a demonstration of the comprehensive application of modern design methods and the coordination of construction processes to achieve impressive results on a severely compressed schedule. Most BPR-generated accounts of the highway's design and development emphasized its status as an illustration of the principles of comprehensive modern motorway design, but Simonson's report also detailed features that contributed to the project's broader function as a waterfront park, nature preserve, and historic and commemorative landscape. The wooded sections and rolling countryside between Alexandria and Mount Vernon were described as "memorial assets" that would be preserved and enhanced through informal landscape treatment and sensitive highway location. Acquiring all the land east of the railroad between Washington and Alexandria to eliminate the threat of incompatible future development was likewise cast as a means of "safeguarding for all time the memorial investment of the nation." The Alexandria zoning easement and the effort to preserve the Abingdon house site in conjunction with a parking area overlooking the nation's capital also constituted efforts to preserve and enhance the highway's memorial character and historic associations. There was also serious discussion of the possibility of extending the memorial highway south of Mount Vernon to connect with historic points such as Belvoir, Gunston Hall, Wakefield, and Williamsburg--all of which were associated with George Washington to a greater or lesser degree.²¹⁵

While the BPR emphasized highway engineering issues, the agency included recreational and resource preservation concerns in its comprehensive parkway plan. The most obvious manifestation of the parkway's intended function as an extension of the park system of the national capital was the extensive waterfront park development planned for the region from Memorial Bridge to Roaches Run. Constructed primarily on filled land, this area was conceived as an extension of the open landscape of Columbia Island, with expansive grassy areas interspersed with occasional naturalistic tree groupings. This serene landscape would replace the ramshackle developments associated with the Arlington Amusement Beach and a private marina located just south of the Highway Bridge. A refined "Yacht Basin" was proposed for the outlet of Roaches Run. Plans were already underway to locate the primary Washington Airport on filled land at its present site, but the BPR did not believe this would adversely affect its plans to develop the Abingdon site as wayside area offering commanding

²¹⁵ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 25-28.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 96)

views of the Potomac River and the Washington skyline. The BPR also envisioned a seaplane harbor south of the main airport that would be encircled with park land surrounding the estuary formed by the outlet of Four Mile Run. The BPR initially proposed constructing a public golf course on parkway land north of Alexandria, but this area was eventually devoted to picnic areas and the Dangerfield Island marina. South of Alexandria, the agency intended to establish a waterfront park extending along the shore of Hunting Creek from Jones Point to U.S. Route 1. Maintaining this area in an undeveloped condition would be intrinsically attractive and also protect the view of the George Washington National Masonic Memorial on top of Shooter's Hill. The memorial highway was intentionally configured to provide northbound motorists with an extended view of this more traditional commemorative gesture. From the project's outset, the woods, meadow, and marsh lands of Dyke Marsh were slated as a 500-acre bird refuge and wildlife sanctuary. The BPR also knew that the government reservation at Fort Hunt would soon be available for use as a public recreation area, and included provisions for convenient access to the fort from the memorial highway. Pullouts, parking lots, and safe exits and entrances were also provided for picnic areas at Riverside, Collingwood Beach and several smaller sites. The BPR planned on developing an extensive system of coordinated hiking trails and bridle paths stretching from one end of the parkway to the other. These were located on the development plans and even staked in the field, but pedestrian path construction only took place on a limited basis around the established parking areas and the bridle path was never built at all, though a separate arch was provided for it during the reconstruction of the Highway Bridge. According to the BPR, there was insufficient demand to justify the expense of extensive trail construction in 1932.²¹⁶

The BPR's emphasis on advanced design principles and comprehensive development strategies was manifest not only in the parkway's physical appearance, but in organizational and technical matters as well. The construction process was broken down into six discrete units based on the particular character of the work to be performed and the materials and equipment involved. Unit I consisted of landfilling and other basic preparatory work, including the riprap seawalls and provision of stone for the bridge-facings. Unit II covered the basic grading and highway layout. Unit III was bridge construction, Unit IV was paving, Unit V was lighting, and Unit VI consisted of the final landscaping work. The hydraulic fill work was performed by the Army Corps of Engineers, and the landscaping was supervised by Simonson and his assistants and conducted primarily by day labor hired directly by the BPR, but the other operations were completed by private contractors working under the strict oversight of engineers Toms and Johnson. Smoot Sand and Gravel Company of Alexandria built the rip rap seawall in preparation for the hydraulic filling operation. The contractor for general grading, drainage, and incidental construction was Vincent Schiavi of Buffalo, New York. Meritt-Chapman & Scott Corporation of New York City built the bridges. MacDougald Construction

²¹⁶ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 25-28, 124.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 97)

Company of Atlanta, Georgia, did the paving from Arlington Memorial Bridge to New Alexandria, and Roberts Paving Company of Salisbury, Maryland was responsible for the remainder of the route. The Westchester Electrical Equipment Company provided the lighting system. The Colonial-style concession building at the Mount Vernon terminus was built by the concessionaire to plans drawn by Washington-based architect Edward W. Donne, Jr., and approved by the Commission of Fine Arts.²¹⁷

The BPR emphasized the phased implementation of the memorial highway's development, but another result of the severe time constraint was the decision to use advanced photographic processes to expedite the design process. The Mount Vernon Memorial Highway designers employed aerial photography as an aid in highway location and landscape development and made extensive use of photographic reduction and duplication processes to speed up the preparation of plans and drawings. Neither of these techniques were new, but their application in the development of MVMH helped dramatize their efficacy as integral components of modern motorway design.²¹⁸ The BPR had contracted with the U.S. Army Air Services in 1926 to produce an aerial photomosaic of the area from Arlington Cemetery to Mount Vernon as an aid in preparing its initial report on alternative routes for the memorial highway.²¹⁹ Reduced versions of this image were used to help publicize the project, and the memorial highway designers used the original photographs in developing plans for the highway alignment and landscape treatment. The photomosaic provided the designers with a ready means of visualizing the topography and foliage cover, serving as an invaluable counterpart to on-site field inspections and conventional topographic maps. Information about foliage lines, specimen tree groups, viewsheds, land use, and other features was readily transferred from the aerial photographs to the development plans. The accurate, up-to-date rendering of information greatly expedited the process of determining property-taking lines and developing a preliminary alignment so that the grading crews could get to work quickly. Combining this new information with the original base line engineering survey and rough center-line location

²¹⁷ R.E. Toms and J. W. Johnson, "Design and Construction of Mount Vernon Memorial Highway," Parks and Recreation 15 (May 1932), 544-45; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," Journal of the American Concrete Institute 4 (April 1932), 575, 584; "The Mount Vernon Memorial Highway," Engineering News-Record 107 (July 23, 1931), 127.

²¹⁸ The practice of aerial photographic surveying was exhaustively described in George T. Bergen, "Aeroplane Topographic Surveys," Transactions of the American Society of Civil Engineers 90 (1927), 627-79. The use of aerial photographic surveys in the development of state highways is mentioned in contemporary articles such as Gibb Gilchrest, "Highway Location: General Considerations," Transactions of the American Society of Civil Engineers 96 (1932), 455-57; and A. R. Losh, "Highway Location: Practical Considerations," Transactions of the American Society of Civil Engineers 96 (1932), 479.

²¹⁹ MacDonald to Maj. Gen. Mason M. Patrick, Chief of Air Services, U.S. Army, 8 March 1926 and 1 June 1926 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

developed earlier by the BPR, the design team was able generate general layout and grading plans by early November 1929. Initial studies for the Washington-Alexandria section were completed even earlier, by mid-June 1929, to expedite work on the hydraulic fill segments.²²⁰

More detailed studies were made during the fall and winter of 1929. The distance from Washington to Mount Vernon was divided into seven roughly equal sections identified by prominent landscape features: Memorial Bridge, Gravelly Point Airport, Memorial Circle, Hunting Creek, Dyke Waterfront, Wellington-Fort Hunt, and Mount Vernon. The design team meticulously delineated landscape views, significant specimen trees and tree groups, existing foliage lines, and other relevant information for each area at a scale of 1" = 100'. Using photo-reproduction techniques rather than the laborious process of hand-drawing significantly speeded the progression from initial grading plans to detailed location studies, as the new information could be added to carefully controlled photostatic images of the initial grading plans reproduced on 4' by 10' sheets. Proposed grading and highway profile contours, property lines, additional recommended takings, important construction items such as bridges and drainage structures, foliage groupings and important specimen trees, and associated design features were delineated on these individual development plans, which served as the basis for later elaborations of planting schemes, lighting and signage layout, and general landscape improvements. Photographic reduction processes were employed again to combine these individual plans into a general development plan at a scale of 1' = 400', which was traced on a carefully stabilized sheet of linen cloth that measured 4'4" by 17'. The final pen and ink rendering of the general development plan, completed under Simonson's signature in April 1930, was a beautiful and truly impressive drawing.²²¹

Simonson implied that the monumental size of the general development plan played a vital role in the design process by enabling the designers to comprehend the entire parkway at a glance, while at the same time retaining sufficient detail to work out the specific development of each area with great precision. Despite Simonson's interpretation, it seems likely that the striking general development plan was intended at least as much for public relations purposes as for its utility in design matters. As soon as the final version was completed, the BPR called in the Engineering Reproduction Plant of the U.S. War Department to make high-quality half-size and one-fifth size reproductions. Three of the half-size reproductions were mounted on linen backings and enhanced with water color renderings for use in highway design exhibits. The BPR ordered at least 2,000 copies of the one-fifth size version, which it included in its 1930 memorial highway booklet and distributed independently for promotional and educational purposes. The exquisite craftsmanship, the sweeping curves of the motorway, and the harmonious integration of the roadway with natural and historic features impressed both

²²⁰ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 14-16, 24.

²²¹ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 22-25, 28.

professional and general audiences. In addition to garnering praise from professional reviewers, the elaborate presentation prompted Mrs. Horace VaDeventer, Vice Regent for Tennessee for the Mount Vernon Ladies' Association of the Union, to declare that she had been "stirred with deepest emotion over the beauty of the plan."²²²

The BPR also constructed elaborate models of the highway's two most complex areas: the Mount Vernon terminus and the cloverleaf grade separation where traffic from U.S. Route 1 crossed the parkway just west of the 14th Street Highway Bridge (Figures 82-83). The models portrayed the proposed development of these areas at a scale of 1/4" - 1', measuring 15' x 18' and 15' x 24' respectively. They were constructed primarily of wood, with various other materials added to provide convincing renditions of topography, vegetation, and construction features (Figure 84). Scale model automobiles demonstrated the sophisticated coordination of parking facilities and circulation features (Figure 85). The BPR claimed the models were essential for developing and refining the details of these of complex arrangements, but their primary function was clearly to impress the oversight commissions, Congress, and the general public that the parkway justified the considerable outlay of federal funds and served as an exemplary means of commemorating the 200th anniversary of George Washington's birth (Figure 86). After receiving the commission's seal of approval the models were moved the rotunda of the U.S. Capitol, where they were inspected by members of Congress and the Bicentennial Commission and displayed from May to September 1930 (Figures 87-88). Photographs of the models frequently appeared in magazine and newspaper articles on the memorial highway and Rose even prepared a special article for Landscape Architecture detailing their use and construction.²²³ After they were removed from the Capitol rotunda, the models were transported to the Washington Auditorium, where they were a highlight of the American Road Builder's Association Exposition, which was being held in conjunction with the Sixth International Road Congress. The models were also featured at the Eastern States Recreation Congress and Exposition during the summer of 1931.²²⁴

²²² Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 26-29; Mrs. Horace VaDeventer to P. St. J. Wilson, 2 November 1930 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives).

²²³ Rose, "Landscape Construction Notes. XLI. The Models of the Mount Vernon Memorial Highway," Landscape Architecture 23 (October 1932), 61-69. In addition to appearing in many of the previously cited articles in professional journals, photographs of the models showed up in local newspaper items such as "U.S. Aids Are Ready to Beautify South Highway Bridge Approach," Washington Post, 9 February 1930; "How New Boulevard Will Approach Mt. Vernon Gates," Washington Evening Star 24 February 1930; and "Memorial Highway Model to Be Shown," Washington Post 4 May 1930.

²²⁴ Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report," 21. The models were eventually dismantled and stored at the USDA Exhibits warehouse in Alexandria, Virginia (letter, H. S. Fairbank, Chief of the BPR's Division of Information to the Map Division of the Library of Congress, dated 5 May 1933, Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30,

MOUNT VERNON MEMORIAL HIGHWAY: DESIGN AND CONSTRUCTION SPECIFICSRiprap, Face Stone, and Hydraulic Fill

Dividing the design and development process into separate segments enabled the memorial highway builders to get started on the landfill sections with sufficient lead time for the excavated material to settle before the beginning of the 1930 construction season. The largest landfilling operation took place between Boundary Channel and the RF&P railroad bridge in the area known as Columbia Basin, where the shoreline was extensively reconfigured to form a continuation of Columbia Island and provide room for the cloverleaf grade separation structure that was to be built at the intersection of the memorial highway and U.S. Route 1 (Figures 89-90). The Columbia Basin fill also enabled the BPR to provide additional park land and eliminate the two southernmost spans of the 14th Street/U.S. Route 1 Highway Bridge. Smaller amounts of fill were required to extend the highway from Columbia Basin past Gravelly Point, and to reduce the cost of bridges at Roaches Run, Fourmile Run, Hunting Creek, and Little Hunting Creek. The combined total length of filled land was over 2 3/4 miles and the gross quantity of hydraulic fill was approximately 4 million cubic yards. The fills at Columbia Basin and Hunting Creek required slightly over 1 million cubic yards each.²²⁵

The landfill operation was divided into two contracts, one for the hydraulic fill itself and the other for building the riprap seawall, providing face stone for the bridges and grade separations, and constructing a cofferdam for the new abutment to the Highway Bridge. This contract was awarded to the Smoot Sand and Gravel Company of Alexandria on September 12, 1929 and work began on September 16. The contractors constructed a 2,500' long seawall to shape and retain the hydraulic fill (Figure 91). The seawall was laid in a free-form curve 400' to 1,000' from the original shoreline in 4'-16' of water. The top of the wall was 4' above mean tide and the base was twice as wide as the height and excavated to 6' below mean tide. 29,665 tons of stone were delivered in scows and placed by two floating derricks at an average rate of 295 tons per day. The soft mud in the area resulted in considerable subsidence so that the seawall wound up requiring 23.5 per cent more stone than the engineers had estimated. Smoot completed the seawall and coffer dam by December 30, 1929. The government's cost was \$85,731.85, with an additional \$4,450.36 for engineering and inspection. The hydraulic filling process caused two ruptures in the seawall, which were plugged with hydraulic dikes

National Archives).

²²⁵ Fill quantities and contracting dates are from W. I. Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 2-3 and "Exhibit No. 4" (Bureau of Pubic Roads, U.S. Department of Agriculture, 1 July 1931 [Illustrated copy in National Archives Record Group 30, Bureau of Public Roads Classified Central File, 1912-50; 420 General Virginia 1926-29, Box 1399])

until the riprap could be replaced. Smoot began delivering face stone for the bridges on June 1, 1930, and completed that portion of its contract on May 11, 1931.²²⁶

The BPR was unhappy with the bids it received for the hydraulic fill and decided to contract this aspect of the project to the Army Corps of Engineers, which brought in two dredges to perform the work under the direction of Major Brehon Somervell (Figure 92). The Talcott was a 500 h.p. dredge with an 18" discharge pipe that had been recently reconstructed and modernized. It was powered by a compound reciprocating engine driven by steam generated by a coal-fired water-tube boiler. The Weletka was a 1500 h.p. dredge with a 21" discharge pipe. It was the most powerful unit of its type in the Army Corps of Engineers' arsenal. The Weletka was 214' long, 40' in breadth, and had quarters for a crew of 60 men. The pump was powered by a triple expansion reciprocating engine running on steam generated by four oil-fired water-tube boilers. The Weletka's dredging ladder was 75' long and could dig to a depth of 45'. The Talcott's dredging ladder was 55' and could dig to 35'. A barge-mounted 650 h.p. diesel booster pumping unit with a 20" pump was available for use with both dredges when the filled material had to be transported a longer distance than the main dredge pumps could manage. When augmented with this booster, the Weletka could pump gravel fill from the bottom of the Potomac to a maximum distance of 6400'. The engineers used pontoons and temporary trestles to carry the discharge pipelines to the fill locations, which shifted constantly as the work progressed (Figure 93). The Talcott had been stationed at Hampton Roads and was able to move into place and begin work on October 21, 1929. The Weletka was towed up the coast from Florida and did not begin pumping until November 7. Both dredges operated on a 24-hour-a-day basis until their work was completed (Figure 94).²²⁷

The dredges were positioned to scoop up an exceptionally coarse grade of gravel and cobblestones from the Potomac riverbed. The engineers made special borings to locate this material, since it dried and settled relatively quickly and was heavy enough to displace the soft mud on which it was deposited, making it ideal fill given the memorial highway project's severe time constraints. The coarse material placed considerable strain on the dredging equipment, however, as it was difficult to move with hydraulic methods and extremely abrasive to the pumps, piping, and cutters, which required frequent maintenance and replacement. Test borings revealed that much of the area where the fill was to be deposited

²²⁶ Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 1-2; R. E. Toms and J. W. Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," Journal of the American Concrete Institute 4 (April 1932), 575.

²²⁷ Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 2-4; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 575; "Work Is Started For Mt. Vernon Boulevard Fill," Washington Evening Star, 22 October 1929; "Giant Government Dredge Making Fills for a New Mt. Vernon Boulevard," Washington Daily News 27 November 1929; "Dredge Is Moved Below Bridge," Washington Evening Star, 25 March 1930.

consisted of 10'- 30' of soft mud over a more stable base. Repeated filling was required in most locations as this softer material shifted and subsided under the weight of the gravel fill. The preferred practice was to pump the fill directly on the center line of the highway alignment so that the softer material migrated to both sides and the roadway would have the firmest possible foundation. A bulldozer was used to shape the hydraulic fill to rough grade after it began to dry and stabilize. The Army Corps of Engineers completed the hydraulic fill work in July 1931, at a cost to the BPR of approximately \$1,250,000.²²⁸

Grading, Alignment, and Basic Circulation Features

Unit II covered the general land grading work and was where the basic structure of the highway began to take shape. The highway's width and alignment, the basic circulation features, and the contours of the roadway's immediate surroundings were all developed at this stage. The contract for Unit II was awarded to Vincent Schiavi of Buffalo, New York on February 11, 1930. Grading began at the Mount Vernon terminus on March 10, 1930 and Schiavi's portion of the project was completed in May 1931 at a cost of \$473,730, which included \$41,145 worth of contingencies added to the original contract amount. Schiavi's forces used two Lima 1-1/4 cubic yard gas powered shovels, a Russel power road grader and an array of bulldozers, caterpillar tractors, motor trucks, and tractor-hauled scrapers and wagons (Figures 95-96). Schiavi also employed a Northwest 1 cubic yard gas powered drag-line for grading and to drive pilings to provide foundations for drainage structures. The total amount of earth moved during the grading process broke down to an average of approximately 50,000 cubic yards of earth per mile. While this represented a considerable volume of earth-moving, BPR designers had taken unusual care to reduce the amount of cuts and fills by locating the highway's alignment to conform to the existing terrain as much as possible. The alignment was also fine-tuned in the field to weave around particularly attractive stands of trees and spare outstanding individual specimens (Figure 97).²²⁹

Adjusting the roadbed to conform to the subtleties of the local landscape was a fundamental tenet of parkway design that Clarke, Simonson, and the BPR were trying to promote as an essential attribute of modern motorway design. The BPR presented the memorial highway as an exemplary illustration of the economic and aesthetic wisdom of this policy, using photographs of the grading, landscaping operations, and final appearance of the highway alignment to demonstrate the ways in which the designers employed subtle vertical and

²²⁸ Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 3-6; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 576.

²²⁹ A detailed description of the grading contract, practices, and equipment employed appears in Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 10-13; see also Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 576-77.

horizontal curves to harmonize the roadway with the surrounding terrain and introduced slight variations in curvature to preserve existing trees.²³⁰ With the exception of the final approach to Mount Vernon, where the decision to utilize the old trolley cut to avoid disrupting the historic terrain necessitated a relatively tight 925' radius curve, the memorial highway designers avoided curves of over 3 degrees and used spiral transitions to further harmonize the roadway with the existing landscape and ease the flow from curve to curve (Figure 99). Superelevation, or banking, was also built into all curves with a radius of less than six thousand feet to improve safety and driving ease. The only significant exceptions occurred along Washington Street in Alexandria and in the subdivision of Wellington, where existing development forced the designers to follow the roadbed of the old electric railway. Employing free-flowing curves to conform the highway to the existing topography contributed to the memorial purpose of the highway, Simonson maintained, by replacing the ugly scars and raw appearance of conventional highway construction with an attractive naturalistic landscape that would be ready for the motorist's enjoyment in time for the bicentennial year.²³¹

With the exception of the Washington Street section, access to the memorial highway was carefully controlled according to the modern parkway design principles of continuous border strips and widely spaced exits and entrances. The minimum parkway right-of-way averaged approximately 200' across, though it broadened considerably at many points. Locating the parkway along the riverfront and acquiring most of the land between the highway and the shoreline had the desired effect of reducing demand for cross traffic or expensive grade separations. Access points to the main roadway were spaced at an average distance of about 1-1/2 miles apart and all major intersections were designed to eliminate or safely accommodate dangerous left turns across oncoming traffic. Parallel border roads were constructed through the Wellington suburb to collect local traffic and channel it into widely spaced and well-designed entrances. The BPR built grade separation structures at major intersections, but the highway designers employed a variety of less costly circulation control features at minor entranceways and crossroads. The "safety-flare" intersections were an innovative attempt at solving the problems caused by motorists trying to make left hand turns on busy highways.

²³⁰ Wilbur Simonson, "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," American City 43 (October 1930), 88. The illustrated version of Simonson's "Final Report" documented these practices in plates 44-44E, 59F-59G, 66, 67A, 68A, 69, 71, 78, and 79. The BPR used illustrations from the development of Mount Vernon Memorial Highway to make the same point on pages 6, 11, 15 and 22 of its publication Roadside Improvement: U.S. Department of Agriculture Miscellaneous Publication No. 191 (Washington, D.C.: Government Printing Office, 1934).

²³¹ Simonson, "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," American City 43 (October 1930), 88; Simonson, "Final Report," 39-41, captions to plates 66, 67A, 78; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 570-71; "The Mount Vernon Memorial Highway," Engineering News-Record 107 (July 23, 1931), 124.

The BPR's rejection of the proposal to construct extensive dual roadway segments on the grounds of economy and landscape preservation meant that, through most of its length, Mount Vernon Memorial Highway was a four-lane, undivided motorway, with the attendant hazards to turning and crossing traffic. "Safety-flare" intersections consisted of tear drop-shaped traffic islands and flared pavement widenings arranged together to facilitate left-hand turns from the main roadway and allow entering vehicles to cross the parkway more safely (Figure 100). The thick ends of the islands were slightly wider than the length of an automobile, so that motorists could cross one stream of traffic and then wait in safety until the other lane cleared. For added safety, an extra lane or "flare" was added in each direction alongside the traffic islands to protect cars making left hand turns from the main roadway.²³² Locating these intersections on curves and employing tear drop traffic islands enabled the designers to streamline what would otherwise appear to be an ungainly bulge into the free-flowing alignment of the highway (Figure 101). While safety flare intersections were promoted as desirable for modern motorway development in general, the BPR claimed that the recreational nature of the memorial highway made such features particularly valuable, since they enabled motorists who just wanted to take a recreational drive or take advantage of the picnic areas and recreational facilities along the route to turn off or reverse directions with safety without having to proceed all the way to Mount Vernon to turn around. When intersections were needed in areas where the highway curvature was "too slight to permit dividing the roadway with pleasing lines," as in the relatively straight segment passing through Wellington, the BPR constructed "staggered outlets." Staggered outlets, also known as "steady flow intersections," were a short-lived traffic circulation feature that was neither as attractive or as safe as fully divided highways or "safety flare" intersections (Figure 102).²³³ Staggered outlets replaced conventional crossroads with two separate entrances located approximately 400' apart. Motorists entering the parkway from one of these roadways would cross the near traffic lanes, enter the inside lane headed in the opposite direction, and either continue onward or pull to the right and exit with a right hand turn. This configuration avoided the hazard posed by traffic from minor roadways shooting directly across the main parkway drive, but it was not a particularly advanced solution to the problem of providing interchanges for modern highway traffic. Neither was the traffic circle located at the north end of Washington Street in Alexandria. The "Memorial Circle" was meant to merge traffic from the main driveway and several side streets while serving as a symbolic entrance to the city and demarcate the

²³² R. E. Royall, "The Mount Vernon Memorial Highway," The Military Engineer 24 (May-June 1932), 239; Simonson, "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," American City 43 (October 1930), 88; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," Journal of the American Concrete Institute 4 (April 1932), 569-72.

²³³ U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction (Washington, D.C.: Government Printing Office, 1930), 18.

transition between high-speed and low-speed zones. The BPR maintained that the circle configuration was "particularly appropriate for this purpose" on symbolic and functional grounds. There was considerable discussion in contemporary design journals about the relative value of different types of intersections for high speed motor traffic. Rotary intersections had their advocates, but most traffic engineers soon dismissed them as unsuitable for modern traffic demands. Alexandria's Memorial Circle was rapidly condemned as an "accident breeder," and eventually replaced with a more conventional intersection controlled by automatic signals.²³⁴

The Mount Vernon Terminus

The BPR's favorite example of the harmonious integration of safety, efficiency, aesthetics, and symbolism was the highway's terminus at Mount Vernon. BPR engineers and landscape architects had to take into account not only the aesthetic and symbolic considerations involved in composing a suitable culmination to the "broad national road of pilgrimage," but find a way to accommodate the scores of automobiles and tour buses that descended on the site. They also had to make provisions for the additional hordes of visitors associated with special events such as the grand celebrations planned for the bicentennial of Washington's birth.²³⁵

Before the parkway was constructed, cars and buses disgorged their passengers in disordered fashion and parked in an unpaved, under-sized, and more or less unplanned parking lot within full view of visitors. The hulking old concession building and the electric trolley turnaround, with its steel rails, poles, and wires, also detracted from the attractiveness and historic ambience of the entranceway to Mount Vernon. The BPR made the improvement of this area

²³⁴ U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction, 16. The Austrian architect and planner Fritz Malcher published an extensive discussion of interchange plans in the prominent journal American City during the fall of 1929, many of which depended heavily on traffic circles or less sophisticated versions of the safety island principle; Malcher's version employed lozenge shaped islands rather than the streamlined form utilized in Mount Vernon Memorial Highway (Malcher, "Abolishing Street Traffic Intersections Without Grade Separation: A Study of Highway Planning and Traffic Control to Meet the Needs of the Motor Age," American City 41 [September 1929], 89-92 and "Abolishing Street Traffic Intersections Without Grade Separation: A Study of Highway Planning and Traffic Control to Meet the Needs of the Motor Age," American City 41 [October 1929], 101-105). New York city planner Herbert Swan defended traffic circles in "Traffic Circles and Rotary Traffic," Civil Engineering 7 (July 1932), 425-29, but emphasized the superiority of grade separated interchanges (Swan, "Separating Grades at Highway Intersections," Civil Engineering 3 [February 1933]: 79-83).

The Memorial Circle was considered a problem by 1934, when a study of accidents on the parkway characterized it as an "accident breeder," and identified as the primary source of serious accidents along the route (Memo, Arno B. Cammerer to Demaray, 19 January 1934, Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives).

²³⁵ U.S. Congress, Senate Committee on the District of Columbia, The Improvement of the Park System of the District of Columbia, 57th Cong., 1st Session (Washington: Government Printing Office, 1902), 122.

one of its highest priorities and began dismantling the electric railway facilities and regrading the area in March 1930.²³⁶

The BPR replaced this confusion with the attractive and efficient arrangements demonstrated in its widely displayed terminus model. The basic circulation pattern was shaped by a tear drop-shaped configuration of traffic islands consisting of an elongated isosceles triangle fronting a grassy circle of approximately 165' radius located in front of the main gate to Mount Vernon (Figure 103). The islands and unobtrusive signs channeled traffic into a one-way stream flowing in a counter-clockwise direction. Extensive parking areas were concealed behind plantings on either side of the central composition. On the Mount Vernon side of the circle, a narrow, curved island separated traffic heading directly to the parking areas from an additional lane provided to allow vehicles to safely stop and drop off or pick up passengers. Another small triangle located on the southwest side of the circle helped channel traffic heading to or from the old highway leading from Mount Vernon to Gum Springs and points south. The major Y-shaped branches of the basic circulation system were widened to 30' to facilitate merging traffic and conform to the theory that two separate 30' lanes were required to safely replace one 40' undivided highway. The entire arrangement, according the BPR, was "based upon the movement of traffic with the least interference and the elimination of collision points." The developed parking facilities accommodated 60 buses and 350 passenger cars in separate area. The bus facility was located on the west side of the central composition and the passenger car area on the right. Trees were selectively cut and the cleared ground planted with meadow grass to provide overflow parking areas concealed in the woods at the north end of the regular bus and passenger car facilities. These lots could theoretically accommodate an additional 1500 vehicles. Raised curbs and paved gutters were used to define the parking areas and direct parking. A dividing island was placed down the middle of the auto park facility to encourage motorists to park in an orderly and efficient manner (Figure 104). Screen plantings concealed both facilities from view. Rather than use expensive paving materials for the entire parking area, the BPR articulated traffic channels with lanes of bituminous macadam laid on a gravel base and covered the actual parking sections with compacted gravel, which was given a bituminous surface treatment to eliminate dust. An attractive brick walkway connected the car parking area to the estate gates (Figure 105). Brick walkways were also laid from the drop-off area to the concession building and the main gate. With the exception of a few widely

²³⁶ Simonson discussed problems at the Mount Vernon terminus in his "Final Report," pp. 3-4 and documented the existing condition in plates 10-17; Simonson juxtaposed a photograph of pre-parkway conditions with the Mount Vernon terminus model in "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," American City 43 (October 1930), 87; Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 7.

spaced memorial elms, the traffic islands were kept open and planted with grass.²³⁷ The improved visibility enhanced safety, but the broad open area also had a powerful visual and symbolic effect (Figure 106).²³⁸

The Great Cloverleaf Controversy

The memorial highway's other outstanding circulation feature, and the subject of the second of the BPR's two models, was the cloverleaf interchange at the parkway's intersection with the segment of U.S. Route 1 leading to the Fourteenth Street Highway Bridge (Figure 107). This was the first full cloverleaf constructed by the federal government. The BPR's use of the cloverleaf was another example of the way in which the Mount Vernon Memorial Highway's paradigmatic status stemmed not from specific technical advances but from its comprehensive incorporation of previously developed design features and practices to provide an harmonious and highly publicized demonstration of modern motorway design principles. The first complete cloverleaf had been built in 1928 by state highway engineers at the intersection of state highways 4 and 25 in Woodbridge, New Jersey. Several smaller versions were being incorporated into the northern extension of Chicago's Lake Shore Drive at the same time that Mount Vernon Memorial Highway was being planned and constructed, but the form had not yet caught on as a common solution to the integration of high speed motor traffic. The cloverleaf's advantage was that it accommodated the intersection of two major highways in a way that eliminated stop signs, cross traffic, and dangerous left hand turns. The combination of loops, grade separations, and traffic islands enabled motorists to smoothly and safely transfer from one highway to the other in either direction or to pass straight through without obstruction or danger from turning, crossing, or entering traffic. The cloverleaf was clearly the ideal solution to the problem posed by major roadway interchanges, but its quadruple loops and myriad minor intersections were initially accused of disorienting motorists, and the complex configuration required a large amount of land and considerable expense to construct.²³⁹

²³⁷ Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," Journal of the American Concrete Institute 4 (April 1932), 564-68; U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction, 20-21.

²³⁸ Simonson, "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," 88.

²³⁹ Carl Condit, American Building Art: The Twentieth Century (New York: Oxford University Press, 1961), 282-83; Herbert Swan, "Separating Grades at Highway Intersections," Civil Engineering 3 (February 1933), 79-83; "In Chicago's Loop: Lincoln Park Commissioners Complete First Section of Wide Safety Boulevard," Parks and Recreation 11 (May-June 1928), 381-85; "Two-Level Intersections Relieve Traffic Congestion" [Portland Cement Association advertisement], American Motorist (January 1929): 64.

The novelty of the cloverleaf design created several problems for the memorial parkway builders. District of Columbia traffic officials initially opposed the proposed cloverleaf as dangerous and exorbitantly expensive.²⁴⁰ The elaborate cloverleaf model was obviously intended to convince motorists and public officials of the design's safety, efficiency, and attractiveness. Photographs of the model and drawings and descriptions of the circulation system helped educate motorists about the design (Figure 108). Washingtonians were not unique in their skepticism about cloverleaves and other complex modern intersections, as similar illustrations appeared in contemporary professional journals, with tiny arrows demonstrating the various circulation patterns.²⁴¹ In May, when the models went on display in the U.S. Capitol, the Post printed a detailed description of the cloverleaf's ability to produce a "continuous and safe flow of traffic" and reported that the memorial highway's cloverleaf was "regarded as one of the finest grade separation structures ever designed."²⁴² The BPR was less modest about its impending achievement. After describing the agency's plans for the area, Simonson asserted, "When completed, it will be without question the most attractive grade-separation traffic unit ever designed."²⁴³ The BPR's publicity efforts were successful, as the D.C. commissioners reversed their objections to the plan in late August and newspaper coverage of the cloverleaf question rapidly shifted from critical to favorable to fawning.²⁴⁴

The BPR's decision to build a cloverleaf intersection on the memorial highway encountered additional controversy that was less public but ultimately more significant than the agency's effort to win over D.C. traffic officials and the general public. Following the Post's publication of the cloverleaf model photograph, the BPR received a letter from Arthur Hale of Baltimore, Maryland, informing the agency that he had patented the cloverleaf configuration in 1916. Hale included a copy of a detailed U.S. patent for an interchange with four loops devised to eliminate left hand turns, issued on February 29, 1916. Hale maintained he had no

²⁴⁰ Toms and Johnson, "Design and Construction of Mount Vernon Memorial Highway," Parks and Recreation 15 (May 1932), 538.

²⁴¹ "A Safety Intersection on the Lincoln Highway," American City 42 (January 1930): 129; Swan, "Separating Grades at Highway Intersections," 79-83; "Right-of-Way for all traffic at Busy Intersections" [Portland Cement Association advertisement], American Motorist (June 1930).

²⁴² "U.S. Aids Are Ready to Beautify South Highway Bridge Approach," Washington Post, 9 February 1930; "Memorial Highway Models to Be Shown," Washington Post 4 May 1930.

²⁴³ Simonson, "The Potomac For Posterity: The Dream of Presidents Now Taking Form." Press release or unpublished manuscript dated February 1930, in U.S. Department of Transportation Library, Washington, D.C., 5.

²⁴⁴ Letter, Sidney Taliaferro, Acting President, D.C. Board of Commissioners to Secretary of Agriculture, 21 August 1929 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives).

interest in profiting financially from his invention, but asked the BPR to credit him as the originator of the idea. The BPR found this request unreasonable, but was not quite sure whether it could ignore an apparently valid patent document. The agency contacted its lawyers and set about trying to invalidate Hale's patent by demonstrating that similar designs had preceded his claim and pointing out that several cloverleaves had already been built, mostly notably the State of New Jersey's widely publicized example. The BPR asked Gilmore Clarke and Henry Hubbard, head of the Harvard School of City Planning, for their opinions on the matter. Clarke dismissed Hale's claim as legally and conceptually untenable. Hubbard directed the BPR to French engineer Eugene Henard's 1906 designs, which contemporary designers and later historians accepted as the true origination of the cloverleaf interchange. Bolstered by this information, BPR Chief MacDonald wrote Hale to inform him that the agency's legal and professional experts had determined that his patent was not valid, since it had clearly been preceded by Henard's designs. Hale continued to write letters to the BPR and other highway building agencies trying unsuccessfully to receive credit and recompense for his "invention."²⁴⁵ While Hale's name appears nowhere in published accounts of the memorial highway, historian Carl Condit' American Building Art acknowledged his 1916 patent and credited the Baltimore inventor with improving on Henard's design to provide the modern cloverleaf with "its fully developed form."²⁴⁶

Bridges and Grade Separations

In addition to the cloverleaf, the BPR provided a number of minor grade separation structures to isolate parkway traffic from intersecting railroads and major cross streets. The BPR built an overpass to carry the parkway drive across a service road leading from Fort Hunt to a wharf on the Potomac River. As long as the military installation remained in operation, the overpass configuration was seen an ideal means of screening recreational motorists from utilitarian traffic. The fort was already slated for conversion to civilian use by the time parkway construction was underway and the BPR used the overpass to provide access to a small overlook at the site of the abandoned wharf. Connections were eventually provided on the east side of the highway to allow northbound motorists to enter and exit the Fort Hunt area without crossing against oncoming traffic. Another modest grade separation structure was built in the Wellington area to allow local traffic to travel back and forth without interfering with the parkway. The Wellington underpass also serves as a crossover in combination with the border roads to encourage motorists to enter the parkway by right turns only. Looking forward to the

²⁴⁵ The cloverleaf controversy is documented in a separate folder of letters dated April-June 1930; Hale's continued harassment of highway officials was discussed in a letter from J.W. Johnson to MacDougal Construction Company, 20 October 1931 (all in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives).

²⁴⁶ Condit, American Building Art: The Twentieth Century, 282.

construction of National Airport, the BPR built an overpass between Roaches Run and Four Mile Run to accommodate airport traffic. This overpass could also provide additional access to the road system of Arlington County if future development warranted such a connection. For the time being, however, the approach ramps and access road leading under the Airport overpass were graded but not paved. At-grade railroad crossings were considered even more dangerous than at-grade motor road intersections. The BPR built a major grade separation structure to carry the RF&P railroad tracks over the memorial highway south of the Highway Bridge cloverleaf. The highway builders took advantage of an existing gully to construct an inconspicuous overpass at the south end of Washington Street in Alexandria that could accommodate the planned relocation of the Southern Railroad tracks. The flat terrain at the north end of Washington Street prevented the development of any sort of grade separation where the railroad crossed the memorial highway north of Bashford Lane.²⁴⁷

Along with emphasizing the practical contributions of grade separations to the safety and efficiency of the memorial highway, the BPR expressed considerable pride in the attractiveness and subtle variety of the parkway's twelve bridges and grade separation structures. Most were arched, reinforced concrete structures faced with rough cut local stone laid in random bond. Many were embellished with dimensioned light-colored granite ring stones, corner quoins, and other trim elements to provide a picturesque rather than crudely rustic appearance. This studied informality was a distinct departure from the grandiose monumentality of late-nineteenth century proposals for Mount Vernon Avenue and the more economical formalism of the BPR's initial drawings, but nineteenth-century park designers had often employed rustic surface treatments. By the late 1920s, rugged, picturesque bridges had become associated with parkway development through the widely publicized example along the Bronx River Parkway and the fervent proselytizing efforts of Gilmore Clarke. Clarke considered the development of attractive bridges to be an integral component of modern motorway design. In a series of article published in contemporary professional journals, he advocated an approach to bridge design that combined engineering and artistry in the same spirit as general parkway design.²⁴⁸ Clarke pointed to the widely praised work of the WCPC as evidence of successful collaboration between bridge engineers and architects or landscape architects, applauding his

²⁴⁷ U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction, 6, 17, 19; Royall, "The Mount Vernon Memorial Highway," 240; Simonson, "Final Report," plates 48B-48F; information on Airport overpass is from "General Description of Mount Vernon Memorial Highway, For Use on American Concrete Institute Bus Trip to Mount Vernon, March 4, 1932," mimeographed copy in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives.

²⁴⁸ Clarke, "Park Bridges," Parks and Recreation 10 (May-June 1927): 447-50; "Bridges: The Past Compared to the Present," Parks and Recreation 11 (September-October 1927): 19-23; "Landscape Construction Notes. XXXV. Notes on Texture in Stone Masonry," Landscape Architecture 21 (April 1931): 197-201; and Leslie Holleran, "Collaboration in Bridge Designing," Architectural Forum 48 (May 1928): 729-38.

associates Arthur Hayden and Leslie Holleran for their technical innovations and enlightened cooperation.²⁴⁹

Clark conceded that exposed steel and concrete bridges could be appropriate in urban settings and might produce strikingly attractive effects in certain other situations, but he believed that for the most part, structures on parkways and rural highways should be made to harmonize with the surrounding landscape through surface treatments of random-laid, rough-cut stone, as well as through picturesque massing and siting (Figures 109-110). Such bridges were rustic and timeless only in appearance. Beneath the native stone exteriors were sophisticated modern structures of reinforced concrete and structural steel, employing the latest engineering principles, such as the rigid-frame, reinforced-concrete arch, which provided more horizontal and vertical clearance than conventional arch construction with less material and expense. Clarke maintained that rustic native-stone finishes were especially appropriate in places like Westchester County, where rocky outcrops abounded and there was a strong tradition of vernacular stone masonry. Clarke also pointed out that, to the practiced eye, the modernity of the parkway structures was evident in their massing and proportion; anyone with a modicum of knowledge about modern bridge design could easily detect the broad, flat profile of the rigid frame arch beneath the contextualizing veneer of native stone.²⁵⁰ He also approved the use of arched steel girders for use in railroad grade separation structures, since railroad companies could rarely be convinced to bear the added expense of stone-sheathed steel girders or reinforced concrete structures.²⁵¹

In the case of Mount Vernon Memorial Highway, it was difficult to argue that picturesque stone-faced bridges developed to harmonize with the rocky landscapes of New England and New York were appropriate to the memorial highway's location along the muddy shoreline of the Potomac River, where there were few, if any, exposed rocks in evidence before the bridges were erected. The parkway region was also not particularly noted for any vernacular stone building tradition, a fact which Clarke was reluctantly forced to admit. After conceding, "There was no precedent to follow,--no stone bridges having been built in Colonial days which dictated a definite style," Clarke fell back on tradition and vague generalizations, asserting that whatever bridges had been built "were simple in character, rugged, their charm enhanced by age." This was enough justification for Clarke to apply the same formula he espoused for other settings, "a simple, restrained design, constructed of steel and concrete and faced with

²⁴⁹ Clarke, "Park Bridges," 448; "Bridges: The Past Compared to the Present," 23.

²⁵⁰ "Collaboration in Bridge Designing," 733-34.

²⁵¹ "Collaboration in Bridge Designing," 733-34; "Bridges: The Past Compared with the Present," 21-23; "Park Bridges," 449, 450; "Landscape Construction Notes. XXXV. Notes on Texture in Stone Masonry," 197-200.

native stone to harmonize with the landscape settings." While the WCPC bridges occasionally displayed a conspicuous degree of eclecticism and picturesque excess, Clarke adopted a more restrained approach for the memorial bridges. His observation that it "seemed important not to make a distinct feature of each bridge, but rather to have them all similar in a character which would be lasting," may have reflected dissatisfaction with WCPC's eclectic accumulation of structures or with the even more heterogeneous and visually dominating bridges across Washington's Rock Creek and Potomac Parkway. The relatively modest bridges may also have reflected the BPR's desire to demonstrate that parkway design principles could be employed economically on a broader scale.²⁵²

BPR engineers studied drawings and articles on WCPC bridges provided Clarke and Downer, and BPR bridge engineer J. V. McNary traveled to Westchester to inspect parkway bridges and confer with Arthur Hayden, the WCPC's leading bridge engineer and inventor of the rigid-frame concrete arch grade separation. Clarke and McNary collaborated on the individual bridge designs, with Clarke handling the massing, proportions, and surface treatments (Figures 111-116) and McNary providing the basic engineering details.²⁵³

The BPR produced preliminary engineering plans for the twelve bridges and submitted drawings of Gilmore Clarke's architectural treatments to the Commission of Fine Arts in December 1929. The commission quickly approved Clarke's proposals, characterizing the designs as "simple, harmonious, suitable and dignified" and praising their overall effect as "quite befitting of this very important project." Working in close cooperation with Clarke, BPR then produced detailed drawings for the bridge construction and masonry surface treatments.²⁵⁴ Brief descriptions of the twelve original bridges and grade separation structures follow, highlighting their distinguishing characteristics. Detailed descriptions and histories of each bridge appear in the individual HAER reports for each feature. The following summary lists the bridges in order from the north end of the highway to the south.

The Boundary Channel Bridge was a single-span, stone-faced structure combining steel and concrete cantilevers and a suspended center span (Figure 117). The BPR and the Arlington

²⁵² Clarke, "The Mount Vernon Memorial Highway," Landscape Architecture 22 (April 1932), 186.

²⁵³ Letter, Downer to MacDonald, 15 May 1929; Clarke included drawings and bridge articles with his report "Parkway - Washington, D.C. to Mt. Vernon, Va., 24 May 1929" (letters and report in Bureau of Public Roads Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1401, Record Group 30, National Archives); McNary's trip was mentioned in a telegram from Downer to McNary, 4 September 1929 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

²⁵⁴ Charles Moore to MacDonald, 14 December 1929 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

Memorial Bridge commission had planned on giving this bridge a more formal treatment to harmonize with the Memorial Bridge and the short span carrying the bridge axis over Boundary Channel to Arlington Cemetery, but raised no strong objections to Clarke's redesign. The Boundary Channel Bridge soon became known as the "Humpback Bridge," since the need to provide clearance for boats using Boundary Channel resulted in a distinct hump. This was exactly the sort of sharp vertical curve that parkway designers explicitly condemned and attempted to avoid by routing roads around hills rather than over them. Highway engineers consider vertical curves, or "humps" dangerous because motorists cannot see over the top of the hump and because automobiles have a tendency to become airborne if they hit the hump and too high a speed. Both situations increase the likelihood of head-on collision on undivided roadways. The new abutment for the Highway Bridge over the Potomac River was located on the shore of the river some distance from the parkway drive. It included a small arched passageway to accommodate the planned bridle and pedestrian paths. The underpass at the south end of the Highway Bridge was part of the celebrated cloverleaf interchange. It was a stone-faced, reinforced-concrete, rigid-frame arch, double-span (Figure 118). The double-span was employed to accommodate the planned future widening of the parkway from four to six lanes from Alexandria to Washington. Each span could accommodate three lanes, though only two lanes were paved in each direction when the highway opened. The center abutment rested on a seven-foot wide median that began beyond the access ramps to the cloverleaf interchange and extended past the RF&P Railroad underpass. The underpass for the RF&P Railroad was another double-span grade separation designed to accommodate the future widening of the memorial parkway. As Clarke noted in several of his bridge articles, railroad companies preferred steel girder construction for economic and structural reasons. In this case, the RF&P's standards prohibited the use of the parkway designers' preferred rigid-frame concrete arch construction. The arched steel girders and general proportions of this underpass were designed to harmonize with the cloverleaf grade separation (Figure 119). Clarke considered facing the girders with stone, but eventually ruled against it. The Roaches Run Bridge was an inconspicuous stone-faced reinforced concrete box bridge (Figure 120). The stone-faced arched overpass for the future airport access broke the pattern of rigid-frame concrete arch grade separations, but since it was an overpass, this would not be apparent to motorists on the main parkway drive (Figure 121). Four Mile Run Bridge was a double arched, stone-faced reinforced concrete (Figure 122). The reinforced concrete deck girder overpass spanning the Southern Railroad track cut in Alexandria was barely noticeable to Washington Street traffic (Figure 123). The stately Hunting Creek Bridge was a triple-arched, reinforced concrete structure faced with native stone (Figure 124). The Wellington Underpass was a perfect example of the classic single-span, rigid frame reinforced concrete arch (Figure 125). The Fort Hunt Overpass was a reinforced-concrete spandrel-filled arch with curving wing walls (Figure 126). It was the only brick-faced structure on the parkway. The Fort Hunt Overpass provided access to an outlook over the Potomac to Fort Washington. According to Simonson, the brick-facing was meant to harmonize with the brick facade of the historic fort. Since it was an overpass, the brick facing would not intrude a

discordant note into the general appearance of the parkway. The southernmost major structure on the parkway was a stone-faced, single-span, full-centered, reinforced concrete arch bridge over Little Hunting Creek (Figure 127). Arch spans ranged from 25' to 50', and all of the arched bridges were spandrel-filled. The Boundary Channel Bridge spanned 100'. The rigid-frame concrete arch spans used for the grade separation structures were 46' across. This provided ample room for traffic in the divided highway segment between the highway and railroad bridges, where north and south bound roadways passed through separate arches, but proved a bit tight at the Wellington Overpass, where all four lanes shared the same arch. Depending on the stability of the underlying soils, the bridges were supported by spread footings extending to depths of from 3'-23'. These footings were in turn supported by wooden piles driven to a depth 22'-80', except in the case of the Airport Overpass, which was supported by 30' concrete piles. Subsurface wood cross braces were employed to further stabilize the footings.²⁵⁵

The contract for bridge construction was awarded to Merritt-Chapman and Scott, of New York City, on April 12, 1930, and approved by the Acting Secretary of Agriculture five days later. This contract included construction of the twelve basic structures plus the removal of the two southernmost spans of the Highway Bridge and the construction and subsequent removal of a detour trestle to carry the RF&P tracks while the new underpass was being built. Merritt-Chapman and Scott's bid of \$1,777,026 was 89 per cent of the BPR's estimate. The BPR engineers were closer to the mark, as the bridge construction component of the project wound up costing \$1,985,252.27. The bridge building operations were planned and executed as expeditiously as possible and the BPR was pleased with the timely completion of this segment of the project. Work began on April 15, 1930 and the last bridge was completed by the end of November 1931.²⁵⁶

Merritt-Chapman and Scott ran the project through their Baltimore office. F. B. Beasman was the firm's construction manager and Grover Denny supervised the work from a field office established at the south end of the Highway Bridge. The Grier-Lowrance Construction Company of Statesville, North Carolina actually built the Airport Overpass, the Four Mile Run Bridge, the Wellington Underpass, and the Fort Hunt Overpass. Grier-Lowrance performed this work as a unit of Merritt-Chapman and Scott rather than as a separate subcontractor. D.

²⁵⁵ Clarke, "The Mount Vernon Memorial Highway," 186-89; Simonson, "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," 88; Royall, "The Mount Vernon Memorial Highway," 241; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 573; J. V. Miller, "Mount Vernon Memorial Highway: Final Report on Unit III, Bridges," 1 (Illustrated copy in National Archives Record Group 30, Bureau of Public Roads Classified Central File, 1912-50; 420 General Virginia 1926-29, Box 1399).

²⁵⁶ Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 577; J. V. Miller, "Mount Vernon Memorial Highway: Final Report on Unit III, Bridges," 5, 8-11.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 115)

M. Easton supervised the Grier-Lowrance portion of the operation from a field office at the Airport Overpass. A number of local subcontractors were involved in excavation and hauling aspects of the work. Smoot Sand and Gravel provided the sand and gravel used in the concrete mix, dredging the material from the Potomac River. The American Bridge Company of New York City fabricated structural steel for the RF&P Underpass and the Bethlehem Steel Company of Bethlehem, Pennsylvania fabricated the steel for the Boundary Channel Bridge. Kalman Steel Company of Baltimore, Maryland furnished the reinforcing steel, which was pre-bent and cut to order. The Woodstock Granite Company of Woodstock, Maryland provided the light-gray granite for the dimensioned masonry. Following detailed plans furnished by the BPR, the company cut most of this stone to order at its quarry about 50 miles from the memorial highway. The same company supplied brown and golden granite for rough stone masonry. Stoneyhurst Quarries, near Cabin John, Maryland, provided mica schist in colors ranging from blue to rust. The masonry was set in place by contractors Tony Kennedy of Philadelphia, and Louis Haller of Statesville, N.C. Class A concrete was specified for all reinforced concrete; Class B for unreinforced mass concrete; and Class S, for seal concrete deposited under water and for pre-cast concrete piles. Lone Star cement was used for most of the concrete mix. Capital cement was used on several occasions when shipments of Lone Star cement were delayed. Penn-Dixie cement was used in the mortar for pointing masonry to produce a lighter colored effect. The riverfront location enabled the general contractor to employ a barge-mounted concrete mixing plant that could be moved adjacent to the construction sites, though concrete was also mixed at a field plant operated by Grier-Lowrance and purchased from central mixing plant operated by the Super-Concrete Corporation of Washington, D.C. The bridge component was the only aspect of the highway construction to report serious accidents. One worker was killed by a falling concrete chute, another had his legs badly broken by a falling timber, and a night watchman fell overboard and drowned.²⁵⁷

Pavement

With the exception of the "safety islands" and the short stretch of median in the vicinity of the cloverleaf grade separation, Mount Vernon Memorial Highway was an undivided, four-lane highway. The basic pavement width was 40'. This was the norm for four-lane highway development at the time. The pavement was divided unequally into two 9'-wide interior lanes and two outside lanes of 11' each in order to accommodate the motorist's tendency to shy away from the edges of the road. In anticipation of future traffic demands, the roadbed between Washington and Alexandria was planned for eventual expansion to a six-lane 60'-wide roadway. Basic roadway grading and features such as light poles, grade separations, and culverts were designed to accommodate the planned six-lane roadway. The basic pavement was widened in certain places to improve safety and efficiency and accommodate some of the

²⁵⁷ Miller, "Mount Vernon Memorial Highway: Final Report on Unit III, Bridges," 9-11.

special requirements of the memorial highway. An extra lane was added in each direction on all divided highway sections. These included the busy region around the railroad overpass and cloverleaf and the "safety flare" intersections located further south along the parkway. Since the memorial highway construction had eliminated the Washington, Alexandria & Mount Vernon electric railway, parkway designers felt obliged to include provisions for public transportation in the form of pullouts for bus stops along the highway. BPR designers incorporated ten bus pullouts along the memorial highway in order to prevent danger or congestion caused by buses stopping to discharge or pick up passengers. Whenever possible, these bus pullouts were located at minor intersections--usually of the "safety flare" variety, where a slight widening could be conveniently incorporated without detracting from the highway's form or function. The usual practice was to add a 40' long, 10' wide flare on the far side of the intersection. At a time when merging lanes for entering and exiting traffic were not yet a standard safety feature, these bus pullouts had the added utility of allowing motorists to merge more easily with the main traffic stream. At a few locations, such as the Wellington suburb, bus pullouts were located independently. These were configured as streamlined appendages approximately 175' long, widening gradually from the outside lane to reach a maximum depth of 12'. The BPR also added a variety of automobile pullouts at scenic overlooks or picnic areas. These ranged from sizeable parking areas separated from the main traffic lanes by safety islands to simple pavement widenings constructed in the same fashion as the bus pullouts. In all cases, the BPR designers took great care to integrate these facilities into the streamlined curves of the main parkway drive. Parking outside of designated areas was strictly forbidden for reasons of both safety and appearance. Continuous three-inch curbs were used to discourage motorists from parking along the sides of the road, though their faces were sloped to enable cars to pull off in emergencies. Considerable lengths of low, rustic wood guardrail was deployed along attractive stretches of the parkway to deter "promiscuous" parking and picnicking.²⁵⁸

The BPR employed both flexible and rigid pavement to accommodate the varying conditions along the memorial highway route. Rigid reinforced concrete slab pavement was used on stable ground and flexible bituminous concrete pavement was used on the hydraulic fill sections, where concrete slabs might tilt or crack as the fill continued to settle. Since most of the parkway north of Alexandria was on filled land, the BPR covered the short stretches of

²⁵⁸ Royall, "The Mount Vernon Memorial Highway," 239-41; Simonson, "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," 88; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 569-73. The bus debate was discussed in "Preserve the Highway" [editorial] Washington Evening Star, 9 July 1932; "Fight on Busses to Mount Vernon Due at Hearing," Washington Evening Star, 13 July 1932; "Busses on the Memorial Highway" [editorial], Washington Evening Star, 13 July 1932; "Busses Not Opposed on Mt. Vernon Road," Washington Daily News, 14 July 1932; "Bus Booths on the Highway" [editorial], Washington Evening Star, 15 July 1932; "Mt. Vernon Route Busses Permitted," Washington Evening Star, 25 July 1932.

concrete pavement in this area with a 2" layer of bituminous concrete to maintain a consistent appearance. Sheet asphalt was used to cover the Washington Street section through Alexandria. From the south end of the filled land at Hunting Creek to Mount Vernon, the parkway consisted solely of reinforced concrete slabs. The access and border roads in the Wellington area received a bituminous macadam pavement befitting their relatively light use. Except in the superelevated sections, a crown of 3-1/2" was used for the 40'-wide pavement and a crown of 6-1/2" was used on the 60'-wide segments. The flexible pavement consisted of a bituminous concrete base and wearing surface laid over a base of either clay-bound gravel or clay-bound gravel mixed with dry choked stone (Figure 128). The minimum flexible pavement thickness was 17", comprised of a 12" gravel sub-base, a 3" bituminous concrete base, and a 2" bituminous concrete top. In the most unstable sections, such as Columbia Island, the BPR was forced to add up to 24" of compacted gravel sub-base. The wearing surface was a course aggregate bituminous concrete with a rough-textured plant-mixed chip finish coat rather than an ordinary squeegee seal. BPR engineers believed this treatment would ensure a more uniform surface appearance and provide a better non-skid surface. Two courses of sheet asphalt were used on Washington Street, over a 7" reinforced concrete base. The reinforced concrete base was constructed with a 10"-7"-10" section in 20' strips with the longitudinal plane of weakness formed along the traffic lane and the transverse plane of weakness spaced at 40' intervals. The concrete pavement was constructed in 10"-8"-10" sections that were the same width as the traffic lanes, so that the joints between sections clearly delineated the lane widths with no need for additional pavement markings. The concrete was prepared and strictly monitored according to the standards of the day (Figures 129-131). Concrete finishing was done by machine finishers, longitudinal floats, straight edges, and belts, and a broom finish was applied to both base and pavement. Curing standards required a 72-hour application of wet burlap. Concrete curbs were constructed as separate units after completion of the basic pavement, so that the curbs could be moved easily if the roadway required widening or alteration (Figure 132). Cast iron drop inlets were provided for drainage. While Mount Vernon Memorial Highway broke no new ground in the technology of concrete paving, it was considered a masterful illustration of the comprehensive and efficient employment of modern concrete paving practices. The American Concrete Institute held its 1932 annual meeting in Washington to inspect the completed pavement.²⁵⁹ The BPR's photographers and film makers lavished considerable attention on the details to the paving process for use in the agency's educational programs.²⁶⁰

²⁵⁹ The BPR escorted the conventioners and provided a summary of the highway's features ("General Description of Mount Vernon Memorial Highway, for use on American Concrete Institute Bus Trip to Mount Vernon, March 4, 1932," in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, National Archives).

²⁶⁰ Royall, "The Mount Vernon Memorial Highway," 241-42; Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 571-73, 581-84; "The Mount Vernon Memorial

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 118)

The paving contract was let in two parts. The McDougald Construction Company of Atlanta, Georgia was awarded the contract for the 7.65 miles of bituminous paving on March 7, 1931 and began work on April 11, 1931. McDougald was also responsible for the sheet asphalt paving in Alexandria, which was accomplished one side of a time to avoid closing Washington Street entirely. The Roberts Paving Company of Salisbury, Maryland was awarded the contract for the 7.79 miles of concrete paving on March 7, 1931 and began on March 18, 1931. The Edgie Russell Company of Frederick, Maryland, as a subcontractor to Roberts, constructed the bituminous macadam border roads at Wellington and the access roads at Fort Hunt, working between June 2, 1931 and October 23, 1931. The McDougald contract was completed on February 10, 1932 at a total cost including engineering and inspection of \$757,541.84. The McDougald Construction Company laid 53,000 square yards of plain concrete base; 77,300 square yards of reinforced concrete base; 59,650 linear feet of concrete curb; and 5,000 linear feet of combination curb and gutter. The Roberts Paving Company contract was completed on December 23, 1931, at a total cost of \$612,790.86. The Roberts Paving Company laid 209,033 square yards of reinforced concrete pavement; 183,764 square yards of bituminous concrete surface; 52,332 square yards of sheet asphalt; and 81,452 linear feet of concrete curb. A white center line was painted on the bituminous concrete sections between Washington and Alexandria. A black stripe was used for the center line on the reinforced concrete section between Alexandria and Mount Vernon. The center stripe was 6" wide, 28,237' long, and required 241.5 gallons of paint, for a total cost including labor of \$381.92. The center stripe was applied by a disc machine pushed by one man. In keeping with the BPR's desire to make this the ultimate example of modern highway construction, two painters with handbrushes followed behind to fill in spots that the machine missed and ensure a perfect stripe, which the BPR undoubtedly cast as part of their comprehensive effort to guarantee that every aspect of the construction was "commensurate with the memorial dignity of the project."²⁶¹

Guard Rail

The rustic guard rail on both sections was built by the Kibbey Engineering Company of Minneapolis, Minnesota. Two basic types of guard rail were used. A standard height rail was used in situations where steep dropoffs or other hazards posed an actual danger to motorists

Highway," Engineering News-Record 23 July 1931, 1215-26; Lee, "Final Report for the Construction of Mount Vernon Memorial Highway," 15-28.

²⁶¹ Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 581-84; Lee, "Final Report for the Construction of Mount Vernon Memorial Highway," 15-28, 36, "Exhibit 17. There are slight discrepancies in regard to the contract and work dates and quantities of material between Lee's "Final Report" and Tom's and Johnson's articles; the cited dates are from Lee's account, which should be referred to by readers seeking additional details about paving or the construction process in general.

(Figure 133), and a low rail (Figure 134) was employed to protect the landscaped shoulders and "to prevent promiscuous parking which would eventually result in the users of the highway driving between solid lines of automobiles occupying the best vantage points for scenery."²⁶² Along with aesthetic justifications for prohibiting "promiscuous" roadside parking, parkway promoters argued that allowing motorists to pull on and off the motorway at random was a dangerous practice that defeated the purpose of designing a sophisticated limited-access roadway. While BPR literature routinely described the guard rails as being constructed from "native" materials, the black locust logs for the posts and rails were obtained from western Pennsylvania and Maryland, just as the stone for facing bridges and culverts was obtained from the piedmont plateau. The project required significantly more guardrail than originally estimated. The contractor had considerable difficulty securing enough suitable timber to complete the job on a timely basis. Bent rails were alternated to produce a picturesquely irregular effect. The wood was treated with two coats of thatch brown preservative shingle stain. The rustic guardrails helped shape the visual experience of the parkway, working along with the naturalistic plantings to soften the striking modernity of the serpentine pavement and ground the parkway's advanced engineering features in the American vernacular tradition.²⁶³

Lighting

The memorial highway was illuminated from end to end with a sophisticated and attractive lighting system. Light poles were spaced approximately every 75' along the highway and located in a staggered pattern on alternate sides of the road. The BPR used a 17' high rustic style cedar lamp post to harmonize with the wooded countryside between Alexandria and Mount Vernon (Figure 135) and a more formal 20' high metal standard "for the more citified area" between Washington and Alexandria (Figure 136).²⁶⁴ Like the guard rails, the rustic light posts were based on WCPC models. The metal standards were intended to harmonize with the standards used along Washington Street and in Washington. While the BPR used the 75' interval as a general goal, actual placements were subtly varied to minimize the light posts' visual impact on significant views, specimen trees, grade separation structures, and other design features. Between Washington and Alexandria, all fixtures were placed an additional distance from the pavement to accommodate the planned expansion of the highway from four to six lanes. Illumination was provided by 600 candlepower lamps in pendant type lighting fixtures equipped with either dome or bowl refractors configured to concentrate the light on the

²⁶² Toms and Johnson, "Design and Construction of Mount Vernon Memorial Highway," 543.

²⁶³ Toms and Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," 584; Lee, "Final Report for the Construction of Mount Vernon Memorial Highway," 26-27, "Exhibit 12"; Simonson, "Final Report," plates 4B, 44C, 67E, 71, 71C, 83.

²⁶⁴ Simonson, "Final Report," 42; "Memorial Lights System is Ready," Washington Post, 24 April 1932.

pavement. Most light standards supported one pendant lighting fixture, but double lamps were used along the traffic island of the Mount Vernon terminus to light both the drop off and through traffic lanes. Underground wires and subterranean transformer vaults of precast concrete were used to conceal the power supply for improved appearance and safety. The contract for the lighting system was awarded to the Westchester Electrical Equipment Company of Yonkers, New York on November 3, 1931. The company began work on November 18 and the contract was completed the following May. Total cost for installing the lighting system, including engineering and inspection, was \$80,696.53.²⁶⁵

The attractive and sophisticated lighting system was in keeping with the BPR's desire to present the Mount Vernon Memorial Highway a model of modern motorway design. The BPR pointed to its ability to combine "the most advanced highway lighting principles" with "simple design to harmonize with the landscape background as inconspicuously as possible" as yet another example of the memorial highway's harmonious integration of aesthetic beauty and engineering prowess.²⁶⁶ Contemporary transportation experts (and electrical supply companies) were engaged in a battle to convince public officials of the need to support expensive highway lighting programs, and the memorial highway was heralded as an exemplar of comprehensive lighting installation.²⁶⁷ Unfortunately, the lighting was not ready in time for the opening of the bicentennial festivities, and the memorial highway's lighting system proved prohibitively expensive to operate and maintain. The lighting was not fully operational until early May 1932 and the lights were shut off by the federal government as a Depression economy measure on July 1, 1933. The resulting increase in traffic accidents may have bolstered the case of highway lighting advocates, but it did not generate good publicity for the National Park Service, which had assumed responsibility for the parkway's upkeep. The park service removed the light fixtures from the rustic poles between Alexandria and Mount Vernon, but the Potomac Electric Company was responsible for the fixtures between Alexandria and Washington and did not bother to take the same precautions. The unused light globes proved an enticing target for vandals, who caused considerable damage by the time the NCPC proposed relighting the highway in November 1937. This effort was apparently unsuccessful as the NCPC again petitioned Congress for money to repair the damage and relight the highway in March 1939. The entire length of the memorial highway was briefly re-

²⁶⁵ Simonson, "Final Report," 42-43; Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 29; Royall, "The Mount Vernon Memorial Highway," 135; Toms and Johnson, "The Design and Construction of the Mount Vernon Memorial Highway," 583-84.

²⁶⁶ Simonson, "Final Report," 42-43.

²⁶⁷ Dudley M. Diggs, "Our Traffic Arteries Must be Safe at Night as Well as by Day," American Highways ????, 6; Diggs, "Illuminated Highways are Safer Highways," National Safety News (May 1931); "Making the Mohawk Valley Turnpike Safer for Night Drivers," American City 43 (December 1930); "The Highway Lighting Idea Advances," Motorodom (February 1931).

illuminated, but the lighting between Alexandria and Mount Vernon was shut down as a war economy measure in December 1942, at which time National Capital Parks Superintendent Irving Root strongly urged motorists to use caution on the unlit portions of the highway. The cedar poles between Alexandria and Mount Vernon were removed after the war and the airport relocation and the reconfiguration of various access roads has taken its toll on the metal light standards as well. The memorial highway is no longer continuously illuminated between Washington and Alexandria, but several of the original metal standards are still extant on the Columbia Island segment.²⁶⁸

Signs, Bus Stop Shelters, and Incidental Features

The comprehensive design process extended to such miscellaneous construction features as bus shelters, benches, culvert head walls, stone retaining walls, safety markers, directional signs, and memorial markers. Whenever possible, these elements were simply designed in the rustic park vernacular and constructed of native--or at least native-looking--materials. The bus shelters were massively constructed in the same manner as the guardrails and cedar light posts, but were built of milled timber for a slightly more finished look. Three slightly different bus shelter models were developed to provide "variety and interest" while harmonizing with the overall development scheme. The nine structures were constructed of stained oak timber and wood shingles, with minor variations in floor plan and roof treatment. The BPR presented these open sided structures as manifestly more attractive than the trolley company's old sheet-metal enclosures. An octagonal model was used on both sides of the road at Collingwood and Clifton. Two square gable-end structures were used at Belle Haven and one was added at "Vernon View." Two hip-roofed shelters replaced the old trolley company structures at Wellington. The shelters were built during the spring and early summer of 1932 at a total cost of \$6,073.18. The BPR emphasized their harmonious relationship with other aspects of the development plan (Figure 137).²⁶⁹

The BPR employed a variety of temporary signs during the construction process, but was particularly proud of the pseudo-colonial traffic signs it developed for permanent installation. The standard traffic sign for use on the memorial highway was a simple white painted

²⁶⁸ "Memorial Lights System Is Ready," Washington Post, 24 April 1932; "New Boulevard Open Tonight," Washington Times, 6 May 1932; "Memorial Highway Will Be Relighted," Washington Evening Star 2 December 1937; "\$14,000 asked to Light Road To Mt. Vernon," Washington Post 9 March 1939; "Mount Vernon Highway Lights to be Turned Out," Washington Evening Star, 25 December 1942. The July 1 shutdown date was mentioned in "Report on Motor Vehicle Traffic at the 'Memorial Circle'-Arlington, VA," Division of Design, U.S. BPR 16 October 1935 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1395, RG 30, National Archives).

²⁶⁹ Simonson, "Final Report," 47-55; bus shelter cost from Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway," 49.

signboard cut in a scrolled pattern with half-round trim to simulate rolled edges (Figure 138).²⁷⁰ The original signs had attractive black lettering, which the BPR characterized as "Colonial," and were further embellished with a silhouette of Washington's head enclosed in an ellipse like a colonial miniature.²⁷¹ Both the Bicentennial Commission and the Commission of Fine Arts lent their approval to the design.²⁷² The Washington allusion was obvious, but the silhouette also emphasized the project's role as a showpiece of the bicentennial celebration, since the iconic profile was also the official emblem of the Bicentennial Commission.

Simonson stressed that "the decorative value" of the signs in no way interfered with their practical utility. The signs were highly visible in daylight conditions and situated in careful coordination with the lighting placement to be easily visible at night. They were located to interfere with broader landscape views as little as possible while still providing motorists with essential information and ample forewarning. In addition to the colonial style signboards, the BPR employed several other types of signage. Short sections of logs were embedded in the ground and studded with reflectors to outline intersections and traffic islands.²⁷³ A smaller, simpler signboard was used at picnic areas, parking places, and scenic overlooks, where they would mostly be read by pedestrians or people in slow moving vehicles. These secondary signs were painted green to blend inconspicuously into the landscape. Another group of plain rectilinear signs designated connections with major roads such as U.S. Route 1. These signs were black and white and bore a version of the Washington silhouette. All stop signs were of the standards variety, with reflector buttons enhancing the lettering for added visibility. Of the 313 original traffic signs, 177 were the signature "colonial" type, 70 were the plain green smaller model, 17 were the larger plain directional signs, 21 were log reflectors, and 26 were standard stop signs.²⁷⁴

Monuments and Memorial Trees

Approximately two dozen memorial were planted on Mount Vernon Memorial Highway. The National Capital Committee of the Garden Club of America planted four large American elms at the approach to the Highway Bridge, along with honeysuckle, roses, and English ivy for ground cover. The D.C. Chapter of the Colonial Dames of America planted two large

²⁷⁰ Simonson, "Final Report," 53.

²⁷¹ According to the BPR, "strongly contrasting black and white" lettering was "Colonial" (Simonson, "Final Report," 54); quote, Simonson, "Final Report," Plate 83A.

²⁷² Simonson, "Final Report," 52.

²⁷³ Simonson, "Final Report," 52-53.

²⁷⁴ Simonson, "Final Report," 52-55.

specimen oaks in a traffic island at the Capital Overlook (now the site of National Airport). The Association for the Preservation of Virginia Antiquities planted four red oaks at the ruins of Abingdon (also later engulfed by National Airport). The Alexandria American War Mothers planted three oriental plane trees at the north end of Washington Street where the memorial highway entered the city. The Mount Vernon Chapter of the D.A.R. planted eight honey locusts in honor of the eight Virginia-born presidents at Belle Haven. The Fairfax D.A.R. planted two oriental plane trees at the Dyke Marsh parking area. The D.C. Chapter of the United Daughters of the Confederacy planted one red oak at the Collingwood intersection. In the closest parallel to the original design program, the National Society of Colonial Dames of America planted thirteen Virginia cedars representing the thirteen colonies at the Mount Vernon Terminus. The Mount Vernon Ladies' Association planted a flowering dogwood at the Mount Vernon Terminus. The Maryland D.A.R. planted a memorial elm at the terminus as well (Figure 139). This last specimen gained special stature from its purported decent from the Washington Elm on Cambridge Common, where the general had officially taken command of the continental army. Most of the memorial trees were accompanied by modest rough cut granite markers bearing bronze tablets commemorating the bicentennial of Washington's birth and crediting the donating organizations (Figures 140-141). Many of these still exist, though the location of some has been changed slightly over time. The District of Columbia Colonial Dames monument at the Capital Overlook was relocated to the Hillcrest overlook when the airport was constructed.²⁷⁵

Mount Vernon Terminus Concession Stand

The "colonial style" concession stand at the Mount Vernon terminus (Figure 141) was designed by Washington architect Edward W. Donn, Jr. Donn was highly regarded as an expert on colonial architecture and Virginia architecture in particular. He already been hired by the Wakefield National Memorial Association to oversee the largely hypothetical "reconstruction" of Washington's boyhood home at Wakefield, Virginia. The BPR commissioned Donn on the Commission of Fine Arts' recommendation. The commission quickly approved his general scheme and elevations, recommending a few internal changes for largely functional reasons. The BPR, the NCP&PC, and Mount Vernon superintendent Harrison Dodge also approved the design. The concession building had not been included in the original memorial highway legislation, so a separate amendment was prepared to authorize its construction and govern its ownership and use. Contracting out such facilities while maintaining strict architectural and operational control was another WCPC policy and also common practice in the national

²⁷⁵ Simonson, "Final Report," 168, plates 87 to 87E, caption to plate 87-E; "Historic Tree Planted: A Descendant of Washington Elm on Highway," Washington Evening Star, 22 April 1932.

parks.²⁷⁶ Since the original concession building had long been considered an eyesore and an undignified impediment to the respectful enjoyment of Mount Vernon, the BPR, the Bicentennial Commission, the Commission of Fine Arts, and the MVLA were intent on exerting strict control over the new facility's appearance and operations. The April 1930 amendment to the original 1928 memorial highway bill authorized construction of a "suitable concession building at the entrance to the Mount Vernon Estate," stipulating that it should be built without cost to the United States and in accordance with plans approved by the Secretary of Agriculture. The structure would be built on the site of the old concession building, which had been ceded by the trolley company to Fairfax County and by the county to the federal government. The federal government would hold title to the building and grant concession leases for periods of up to ten years. The BPR advertised a contract requiring the concessionaire to erect the building, keep it in good condition, and furnish and maintain a general waiting room, a women's rest room, and lavatories for the general public. These were to be maintained in a sanitary condition and made available for free use by visitors to Mount Vernon from 7 am to 6:30 pm. The building would include a room for souvenirs, but only government-approved items could be sold or displayed. Almoors Securities, Inc. of Jacksonville, Florida, was the only bidder and was awarded the contract in May 1931. The old concession building was torn down during December 1931. After failing to receive an acceptable bid for the new building's construction, the concessionaire erected the building itself at a cost of \$64,741.72. A public waiting room with additional toilet facilities was added at cost of \$4,276.85. The concession building was partially completed before the old building was torn down and open for business in time for the bicentennial year. In March 1932 the BPR and the Commission of Fine Arts approved the concessionaire's request to expand the original concept to include an open air extension with a soda fountain and sandwich counter located to the left of the main concession building. This structure was constructed during the spring and early summer of 1932. Two small "colonial revival" outbuildings were also built to harmonize with the concession building and conform to the general theme of the parkway. An octagonal booth with white clapboard siding and a shingle roof was placed near the unloading platform to serve as an information booth and police lodge. A square colonial revival tool shed occupied an inconspicuous spot at the back of the concession building's courtyard.²⁷⁷

²⁷⁶ U.S. Congress, House Committee on Roads, Roads. Hearings before the Committee on Roads . . . on H.R. 8810 (71st Cong., 2nd Sess., 18 February 1930), 2.

²⁷⁷ Letter, Charles Moore to MacDonald, 3 July 1930; Memo, Toms to MacDonald, 24 July 1930; letter, MacDonald to Commission of Fine Arts, 26 July 1930; Letter, Charles Moore to Edward Donn, Jr., 8 December 1930; Letter, Macdonald to Alex McCashley, Chief, Division of Purchase, Sales, and Traffic, USDA, 22 May 1931; Letter, Toms to C. A. Offerberth Construction Company, 16 June 1931; Memo, MacDonald to Arthur Hyde, Secretary of Agriculture 18 June 1931 (Bureau of Public Roads Classified Central File, 1912-50; 420 420 Manor Realty Mt Vernon Hwy, VA 1928-1942, Box 1394, Record Group 30, National Archives); letter, Toms to Clarke, 12 November 1930; letter, Toms to Grant, Director NCP&PC, 24 November 1930; letter, Toms to

Landscaping, Planting, and Forestry

The final phase of the initial construction process was the development of the parkway's natural landscape. Unlike conventional road building, however, where trees, shrubs, and flowers were added in more or less uncoordinated fashion after the highway was completed, landscape development issues played a prominent role throughout the design and construction process. While aesthetic concerns had always dominated parkway and park road construction in this manner, and the memorial nature of the project obviously demanded close attention to aesthetic concerns, the BPR wanted to demonstrate that arterial highway builders could employ similar principles safely, efficiently, and economically. The fundamental point that modern motorway promoters like Gilmore Clarke were trying to make was that modern road design was predicated on the harmonious integration of engineering and landscape architecture, and that aesthetic concerns contributed to the safety and efficiency of the modern highway. Once again, Mount Vernon Memorial Highway was to be the ultimate example of this principle and a paradigm for the future development of American highways.

The seeds of the parkway's landscape development were planted when the BPR abandoned the formal boulevard concept in favor of the naturalistic treatment favored by contemporary landscape architects. By opting for the WCPC approach to parkway design, the BPR committed itself to a design and construction policy that placed highest priority on the preservation and enhancement of natural scenery. Economic, political, and engineering considerations obviously helped determine the parkway's riverfront location, but BPR engineers and the various oversight agencies were clearly enamored with the scenic potential of the Potomac shoreline and nearby tracts of undeveloped land. After establishing the basic location, the landscape architects and engineers collaborated to devise an alignment that would be safe and efficient while at the same time preserving and showcasing attractive natural and historic features. Between Washington and Alexandria, the designers concentrated on providing impressive views of the Washington skyline. The landscape was left relatively open and the road swung in curves and over slight elevations to provide sweeping vistas of the monuments and federal buildings, while screen plantings were employed to shield motorists from the rail yards and industrial facilities that river route opponents had warned would

Dodge, 2 August 1929; letter, Secretary of Interior, Arthur Hyde to Almonors Security, 12 March 1932 (Bureau of Public Roads Classified Central File, 1912-50, 420 Contracts, Concession Building, Plant Material, Virginia, 1930-32, Box 1405, Record Group 30, National Archives); letter, MacDonald to Grant, 14 November 1932; "Demolition of Concession Building," report by Leon A. Harris (Bureau of Public Roads Classified Central File, 1912-50, Contracts, Concession Building, Plant Material, Mt. Vernon, Virginia, 1930-32; Box 1404, Record Group 30, National Archives); Simonson, "Final Report," plates 80, 80A-80G.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 126)

compromise the shoreline location's attractiveness and memorial dignity. The relatively formal nature of the landscape, with its broad lawns and ornamental metal light standards was conceived as a transition zone, both visually and symbolically, between the naturalistic informality of the rest of the parkway and the stately dignity and broad visual effects of Washington's monumental core. Just north of Alexandria, parkway designers focused attention on the Washington Monument by bending the axis of Washington Street slightly and continuing it as a long straightaway pointed directly at the distant obelisk. A long curve descending from the Abingdon site to the Roaches Run causeway had a similar effect. South of Alexandria, the designers aligned the highway to provide motorists with an extended view of the George Washington National Masonic Memorial. These visual links to powerful symbolic images were meant to underscore the memorial highway's commemorative function without intruding conspicuously man-made structures within the predominantly natural landscape of the parkway itself. The parkway designers also pointed out that the completed highway would provide a physical link between these monuments and Mount Vernon, combining "the three great memorials to George Washington" into one unified group and creating a continuous commemorative landscape stretching for fifteen miles along the Potomac River, from Washington's home, to his "home town," to the capital city that bore his name. Historic downtown Alexandria provided the only break in the otherwise continuous band of greenery. BPR designers planned on softening the city's urban streetscape with double rows of elms, which would hopefully mature to arch across Washington Street and form a natural yet urbane transition between the formal landscape north of the city and the informal development between Alexandria and Mount Vernon. The expansive riverfront views provided by the crossing of Hunting Creek were quickly followed by the thick, brushy vegetation of Dyke Marsh and the adjoining woodlands composed mainly of locust, sweet gum, and tulip trees. Parkway designers subtly manipulated the motorists' experience in this fashion throughout the length of the memorial highway, alternating towering trees and constricted, woodland corridor effects with sunny openings and window-like vistas produced by selective cutting and planting along the margins of the roadway. After passing through the dense woodlands and being squeezed through the long straight embankments left over by the old trolley lines through Wellington Villa, motorists emerged into the most open and park-like portion of the lower parkway, where the road followed a graceful curve through grassy lawns interspersed with random plantings of Virginia pine and red cedar. Returning to the Potomac, the road followed a high bluff heavily wooded with mature stands of beech, oak, and maple, along with occasional openings providing sweeping river vistas and roadside clearings embellished with Virginia cedar and holly. Parkway designers provided a large picnic area with rustic seats, tables, and fireplaces in this area, along with several smaller scenic pullouts.²⁷⁸ In addition to the overlook associated with the Fort Hunt Overpass, the BPR provided a scenic pullout at a

²⁷⁸ Quote and general background for this characterization of the parkway route are from Simonson's manuscript, "The Potomac For Posterity: The Dream of Presidents Now Taking Form" (in Simonson File, U.S. Department of Transportation Library, Washington, D.C.; quote, p. 9).

small rise directly across the river from Fort Washington, reminding motorists of the historic significance of the surrounding landscape. The parkway then swung down close to the Potomac shoreline, offering a fleeting view of Mount Vernon and passing another newly developed picnic area near the outlet of Little Hunting Creek, which replaced the old Riverside stop of the electric railway and carried on a tradition use for this area that supposedly dated to Washington's time. After crossing Little Hunting Creek, the wound through a forest of towering old beech trees, rising and turning sharply before bursting into the open again at the grassy ellipse of the Mount Vernon terminus (Figures 142-147).

The BPR's engineers and landscape architects were extremely successful in their efforts to create the impression that the attractive landscape of the memorial highway was a happy accident of nature that long predated the parkway development, and that the new highway followed a fortuitous course through the rolling terrain, requiring no cuts or fills and not destroying so much as a single tree (Figure 148). This masterful illusion required the concentrated expenditure of hundreds of thousands of man hours and millions of federal dollars. The careful study of aerial photographs and topographic maps allowed the design team to establish an alignment that required minimal grading and excavation and conformed with broad patterns of tree cover and topography to produce attractive roadside conditions and develop impressive longer views. Simonson, Clarke, and the BPR engineers refined this basic alignment in the field to spare individual specimen trees and adapt the roadway to subtle variations in the vegetation and topography of each locality (Figure 149). After staking the final centerline and identifying prize trees for preservation, the BPR issued strict guidelines to the grading contractor to ensure that all excavations and unavoidable manipulations of the terrain were carefully disguised by gently grading and rounding manmade slopes to harmonize with the contours of the surrounding topography (Figure 150). While conventional highway builders routinely left steep side slopes characterized by barren exposures of raw rock and gravel, the BPR stipulated that all cuts and fills be widened to produce more gradual, naturalistic slopes, and that they be gently rounded at the edges to soften the transition to the surrounding landscape. The standard 1:1 slope ratio was replaced with a maximum ratio of 1:2, though an even flatter ratio of 1:4 was not uncommon, especially in more open areas of the parkway and on the hydraulic fills. The landscape architects maintained that these gentle rounded slopes were not only more attractive, but more resistant to erosion and longer lasting, and therefore more economical in the long run despite their higher initial cost. Since all disturbed areas would be carefully replanted, topsoil removed in the grading process was stockpiled for later reuse (Figure 151).²⁷⁹

²⁷⁹ "The Mount Vernon Memorial Highway," Engineering News-Record, 23 July 1931, 124; Royall, "The Mount Vernon Memorial Highway," 239; Toms and Johnson, "The Design and Construction of the Mount Vernon Memorial Highway," 571; U.S. Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction, 8-9; Simonson, "Final Report," 40.

Since it was impractical to begin extensive planting operations before the major grading and construction work was completed, the memorial highway designers had to produce an attractively developed landscape in just two planting seasons. Most of the major planting operations were conducted in 1931 and 1932, with the majority of the work performed from late winter to early summer 1932.²⁸⁰ While the bulk of the planting operations had to be deferred until late 1931 and spring 1932, BPR forces began improving the parkway woodlands and identifying trees and shrubs for preservation or transplanting in early 1930 to provide a thorough analysis of available resources and serve as guidelines for the grading and construction crews. Desirable plant specimens were catalogued and tagged with red ribbons and grading and construction crews were instructed to take whatever means necessary to avoid destroying selected material. Locations, size, variety were then recorded on preliminary planting studies prepared during the summer of 1930. Simonson and his assistants portrayed the entire parkway in remarkable detail on 45 standard-size plans. Most were drawn at a scale of 1" = 100', but special areas requiring meticulous examination or extensive planting, such as the Mount Vernon terminus, were portrayed at a scale of 1" = 50'. In addition to this detailed accounting of existing vegetation, Simonson's team added all available information about property lines, titles, existing and proposed construction, and other relevant information to facilitate rapid completion of the final planting plans once the grading and general construction forces were out of the way.²⁸¹

In the meantime, the forestry forces went to work on the existing woodlands, clearing brushy undergrowth, thinning out dead and unhealthy trees, and selectively opening vistas over the Potomac and along the proposed roadway through "the careful use of the axe."²⁸² General cleanup work began in March 1930 and extended in some areas through December 1931. The BPR hired crews to remove all dead and diseased growth, pull stumps, grub out weeds and brushy undergrowth, dismantle old fence rows and other random structures, and transport the waste materials to dumping areas at Fort Hunt and remote areas of the parkway. Under the direction of Paul W. Day, the special forestry force closely inspected and treated all major trees along the parkway route with modern tree surgery techniques. Severely damaged and unhealthy specimens were slated for removal.²⁸³

In April 1930 BPR forces began salvaging large quantities of native trees and shrubs from the path of the grading and paving operations, transplanting them to safer locations nearby or

²⁸⁰ Simonson, "Final Report," 11-12, 31 (quotes), 58 (quote); 128-29, 141-42.

²⁸¹ Simonson, "Final Report," 31-38.

²⁸² Simonson, "Final Report," 12.

²⁸³ Simonson, "Final Report," 93, 107-109.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 129)

storing them in temporary nurseries for replanting once the basic road construction was completed. At the same time, they collected similar material from the parkway margins and from adjacent private land for use in shaping and enhancing the roadside landscape. During 1930-1931 these operations were concentrated in the Wellington-Collingwood area and at the Mount Vernon terminus. The BPR employed a variety of techniques and equipment to accomplish this task. The backbone of the operation was a 10-12 man crew working with a 1-1/2 ton Ford truck equipped with special winch equipment, steel stone boats, tree canvases, and wooden platforms. Horse-drawn stone boats were used to move shrubs and smaller trees in wet areas and during muddy seasons when motorized equipment had difficulty maneuvering. The BPR tried to keep tree balls as large as possible to ensure successful replanting, aiming for a size that three or four men could maneuver with relative ease. In order to save particularly attractive specimens, the tree-moving crew devised methods of using the winch truck in combination with wooden platforms and rollers to move trees up to 50' tall with root balls weighing up to 15 tons (Figure 152). Most transplanting work was done with government equipment, but the BPR hired a special hoist-winch tree-moving truck and two-man crew to speed operations in the Wellington-Collingwood area, where over one hundred Virginia cedars ranging in height from 12'-50' were moved out of the path of construction during 1930 and spread along the parkway between Belle Haven and Little Hunting Creek (Figure 153). Most were rearranged within the Wellington-Collingwood area itself, and combined with Virginia pines in naturalistic arrangements to produce what the BPR termed "landscape scenery typically Virginian in character" (Figure 154). Other transplanted trees included red oaks, willow oaks, red maples, elms, sycamores, and large quantities of flowering dogwood, along with thousands of flowering shrubs. Over 5,000 trees and shrubs were transplanted within government property between March 1930 and February 1931 at a cost of \$6,120.48. During spring 1931 the BPR made contracts with neighboring landowners to extend its collecting efforts to private property, transplanting over 44,000 trees, shrubs, and ground cover plants to the Mount Vernon terminus alone. These included 40 Virginia pines, 5 Virginia cedars, 31 willow oaks, 210 American hollies, 335 flowering dogwoods, 8 American elms; 7,891 native laurel bushes; 5,515 lily clumps; and 29,520 Vacciniums for ground cover. By June 1931 over 80,968 trees, shrubs, and plants collected from both private and government land were stored in the temporary nursery at New Alexandria awaiting dispersal. While BPR forces took care of most of the transplanting work and moved some large specimens, including a 50' Virginia cedar with a 15 ton rootball at Wellington Villa, the problem of transplanting very large trees was regarded as specialized work and was contracted to two professional tree services. A. Gude Sons and Company provided the 24 large American elms used as memorial trees at the Mount Vernon terminus. These were set in place by March 20, 1931, at a cost of \$4,776. J. H. Small and Sons planted 207 large trees of assorted varieties (primarily oaks and American elms) in other areas of the parkway, with most being transplanted from government land and located on the hydraulic fill areas between Alexandria and Washington, and more particularly in the vicinity of the Highway Bridge cloverleaf. The RF&P Railroad donated 33 American elms for this area. This work was completed by April 19, 1932, at a cost of

\$11,284.69. In both cases, the government incurred slight additional costs by using its own crews and equipment to excavate the tree pits and perform minor follow-up landscaping.²⁸⁴

By late fall 1931 the grading, paving, and incidental construction crews had completed their jobs sufficiently to allow the BPR forces to proceed with the final landscape development. The stored topsoil was loaded, distributed, and spread on the shoulders and slopes of the highway between December 1, 1931, and May 7, 1932. The careful conservation of topsoil was a prudent measure that would have produced more than enough material for healthy roadside development on a normal highway or parkway project. Unfortunately, the large extent of filled land created a demand that far exceeded the government's topsoil supply, especially since the sand and gravel composition hydraulic fills required massive applications of soil and humus if these new shoreline areas were to sustain reasonable plant and tree growth. In fact, the BPR found that it only had one-third as much useable topsoil as needed to cover these areas. The parkway designers employed several techniques to solve this problem without importing large amounts of topsoil from private sources. First, they scaled back the proposed 9" topsoil depth to 5-6", topping this off with a half-inch layer of humus for improved growth. Peat moss was used primarily in areas south of Alexandria where the native species that dominated the planting plans demanded more acidic soils. Native laurel, holly, azaleas, and vacciniums, in particular, required acidic soils for optimum development. Sedge peat was used for the roadway shoulders and grassy lawn areas where soil needed lightening and loosening but extensive planting was not mandated. The project's landscape architects also determined that sedge peat would provide a better environment for tree and shrub growth on the sections north of Alexandria. Reducing the amount of topsoil and combining it with a thin layer of humus in this fashion reduced the deficiency from two-thirds of the requirement to one-half. To provide enough healthy topsoil to rehabilitate the filled areas, the BPR still found it necessary to truck 25,000 cubic yards of good soil from borrow pits east of Potomac Yards and use over 40,000 cubic yards of river mud left over from the bridge excavations at Hunting Creek and Little Hunting Creek. Where trees and shrubs were scheduled to be planted on the filled land, BPR forces dug extra large holes and filled them with pockets of river muck and humus to provide a better chance of successful transplantation. On both the filled land and the ordinary sections of the parkway, the BPR used a dragline and dump trucks to deposit the topsoil in windrows, then spread it to uniform thickness with bulldozers. The final shaping to grade and preparation for seeding and planting was accomplished with horse-drawn equipment and hand labor. Horse drawn equipment and hand labor was used for both operations in areas where mechanized equipment was unwieldy, such as small clearings, wet areas, and steeper slopes, and around structures such as guard rails, light posts, and culverts. The topsoiling and final grading operations used approximately 90,000 cubic yards of soil at a cost of \$78,136.95, most of which went toward dragline and bulldozer operation and general labor. To keep down weeds

²⁸⁴ Simonson, "Final Report," 61- 127-42; quote, 142.

HAER
VA
30

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 131)

and establish better conditions for general grass growth during the bicentennial year, the BPR planted most of the broad lawn areas with soil-improving cover crops such as soy beans and Canada peas during 1931, plowing the crops under before they matured. The BPR also applied 20 tons of cottonseed meal and 60 tons of bone meal fertilizer during the 1931 and 1932 spring planting seasons. Cottonseed meal was general used for tree and shrub planting areas and the bone meal was spread over the lawns and shoulders to improve grass development. Total expenditures for fertilization were \$5,684.07. This extensive application of topsoil and fertilizer was another aspect of the parkway designers' comprehensive design and development process. It was also meant to ensure that bicentennial tourists would be greeted by a strikingly beautiful landscape of verdant lawns, blossoming vines and flowers, and robust trees and shrubs.²⁸⁵

The BPR began intensive planning for the crucial 1931-1932 planting season during August 1931, using the preliminary planting plans developed the previous year as a basis. Henry C. Nye, the WCPC's planting expert, arrived on August 1 to oversee the final development of planting plans and direct the actual execution of the planting efforts. Nye worked closely with Simonson and his staff, and Gilmore Clarke made frequent consulting trips during this final landscape development process. Nye and Simonson spent the month of August alternating between field inspection and the drafting table, producing a general outline of the proposed planting scheme for Clarke's approval. At this stage, the general massing of the basic plantings was blocked out on the existing condition drawings, along with detailed notes about plant types and miscellaneous features and arrows demarcating significant views and vistas. The planting scheme generally called for large, informal groupings designed to screen objectionable outlooks, emphasize important views, and produce or enhance attractive variations in pictorial effect. The underlying desire to combine beauty with efficiency strongly influenced the planting arrangements as well, as the landscape architects carefully united these aesthetic goals with utilitarian concerns such as ensuring open, unobstructed vision for traffic in all situations and reducing maintenance costs through relatively simple arrangements and heavy reliance on hardy native or localized plant types.²⁸⁶

Clarke came down to Washington in early September to examine the plans in the field and confer on the next phase of more detailed elaboration. Nye and the landscape architects spent

²⁸⁵ Simonson, "Final Report," 113-23; Lee, "Final Report for the Construction of Mount Vernon Memorial Highway," 33.

²⁸⁶ Simonson, "Final Report," 34-37; BPR engineer Toms, did, however recommended Hubbard and Kimball's An Introduction to the Study of Landscape Design and J. M. Bennett's Roadside Development to M. W. Torkelson, Director of Regional Planning for the Wisconsin Highway Commission (Letter, Toms to Torkelson, 1 April 1930, in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives).

the rest of the month pencilling in the varieties and quantities of plants and working up a rough cost estimate. Clarke reviewed their work and made another field inspection tour in early October. The landscape staff then developed a final draft plan for each section detailing the exact quantities, varieties, and locations of proposed plantings, existing vegetation, views and vistas, and proposed plantings around constructed features such as light post and guard rails. Clarke approved these drawings in late October, enabling the office to begin preparing the final planting plans and plant order lists. The final planting plan series, consisting of 45 standard-side sheets at either 1" = 100' or 1" = 50', and one supplementary one-eighth scale plan for the areas immediately surrounding the Mount Vernon concession building, was completed in late January and officially approved by the Secretary of Agriculture and the Bicentennial Commission February 18 and 19, 1932.²⁸⁷

The BPR had long recognized that the general construction schedule had precluded any chance of having the final landscape development completed in time for the actual anniversary of Washington's birth on February 22, but the bicentennial celebration was scheduled to run through Thanksgiving, and the agency was determined to produce an attractive landscape for the main influx of tourists, which was expected to occur during the summer of 1932. With this in mind, the BPR launched a massive planting program that began in early March, peaked in April, and began to wind down by the end of May. This operation required an enormous degree of coordination and meticulous planning to ensure the steady delivery and healthy installation of plant material with minimal delays or disruption. At this stage of the operation, most of the plant material was nursery stock, which was tended to rejuvenate more quickly after planting than wild transplants, and easier to acquire in the large quantities and consistent qualities required to rapidly transform the newly completed construction into an attractively verdant landscape. Simonson, Nye, and their assistants divided the parkway into four roughly equal sections and developed a coordinated command structure that was designed to encourage responsibility and reward foremen and laborers who demonstrated skill and productivity. Comprehensive distribution charts were developed and meticulously maintained to track and facilitate the delivery, temporary storage, and final allocation of the enormous quantities of plant material used in the project. Over 20 railroad cars of nursery stock were delivered to the BPR's temporary redistribution nursery at Potomac Yards alone. Over the course of the spring planting season, the landscape forces received and placed 113,797 nursery plants, including 10,146 small trees, 55,250 shrubs, and 48,401 vines. The stockpile of transplants from government and nearby private lands provided another 771 trees, 13,753 shrubs, and 11,492 vines. According to BPR figures a total of 139,813 plants were distributed throughout the parkway during the spring 1932 planting season, at a total cost of \$24,771.40. In addition to transplanting all these trees, shrubs, vines, and plants, the BPR seeded 200 acres of road shoulder and 50 acres of hydraulic fill and associated park lands, including the Mount Vernon

²⁸⁷ Simonson, "Final Report," 35-

terminus, various picnic grounds and scenic outlooks, and the broad grassy areas at Wellington-Collingwood, at a cost including labor of \$3,825.52. The BPR used a variety of grass types calculated to withstand Washington's long, hot, dry summers. Italian rye, sheep fescue, and red top predominated. The BPR chose a special, more luxurious mix for the Mount Vernon terminus area, consisting of Kentucky blue grass, colonial bent grass, and Chewing's Fescue. The grass-seeding was the last major stage in the initial landscape development program, beginning in mid-March and ending in late June 1932.²⁸⁸

²⁸⁸ Simonson, "Final Report," 88-91, 144-58.

MOUNT VERNON MEMORIAL HIGHWAY:
COMPLETION, INFLUENCE, ALTERATIONS

The memorial highway project generated enormous publicity and was widely praised by experts in the highway engineering, city planning, and landscape architecture communities. By January 1931, however, the BPR realized that the original \$4.5 million appropriation was not going to come close to covering the project's costs. BPR chief MacDonald had to go back to Congress and plead for an additional \$2.7 million appropriation to complete the landscaping and acquire additional land parcels to protect and enhance the parkway environment. MacDonald pointed out that hydraulic fill operations had cost significantly more than the agency had budgeted due to the severe time constraint that had forced the engineers to seek out the more solid but difficult to acquire heavy gravel fill. The rebuilding of the south end of the Highway Bridge, the complex cloverleaf intersection, and the Airport Overpass were additional items that the BPR had not originally budgeted for, but which became necessary as the project progressed. A significant portion of the supplemental appropriation was earmarked to purchase additional land in areas that the BPR designers and the NCP&PC considered essential for protecting the parkway from undesirable intrusions.²⁸⁹

The BPR's request was opposed by some congressional critics, who objected the 50 per cent cost overrun as further proof that the memorial highway was an exorbitant waste of the tax payers' money. Senator Robert B. Howell of Nebraska accused memorial highway advocates of deliberately underestimating costs and willfully disregarding Congress's budgetary limitations. Nebraska congressman Robert G. Simmons asserted that the expense of the memorial highway would "make Washington turn over in his grave." Most congressional critics stated that they firmly supported the idea of commemorating Washington with a dignified approach to Mount Vernon, but insisted that the price was too high, and that approving the increase would set a dangerous precedent by condoning the all-to-prevalent practice of grossly underestimating the cost of pork barrel projects and then coming back and demanding additional appropriations to complete unfinished projects. Led by senators Swanson of Virginia and Fess of Ohio, memorial highway backers continued to insist the project merited whatever expense was necessary to ensure that it would serve as a compelling commemorative tribute to the nation's first president and accommodate bicentennial tourists safely and attractively. Howell made a final attempt to delay passage of the bill by requiring the comptroller general to certify that the BPR could complete the project without returning for

²⁸⁹ "Highway Project Needs More Funds," Washington Evening Star 13 February 1931; MacDonald explained the reason's for the cost overrun in a letter to Congressman R. Walton Moore dated 28 February 1932 (in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1397, RG 30, National Archives).

yet another supplemental appropriation, but this amendment was voted down. Congress approved the supplemental appropriation bill at the beginning of March 1931.²⁹⁰

The BPR's comprehensive planning effort and fast-track development schedule enabled the agency to accomplish an enormous amount of work in a relatively short period of time, but the memorial highway was still not ready when the 200th anniversary of George Washington's birth rolled around on February 22, 1932. The actual roadway was substantially finished by December 1931, but the bulk of the landscape planting work still lay ahead, the lighting and signage had yet to be installed, and there was a troublesome legal issue regarding the enforcement of traffic regulations on the memorial highway. The Department of Agriculture planned to turn over the parkway to the Office of Public Buildings and Public Parks of the National Capital (OPB&PP) to be managed as part of the national capital park system as soon as the BPR finished its work; in the meantime, the BPR had neither the legal authority nor the resources to police the highway. The landscape architecture forces were also concerned that public use of the highway would interfere with their operations and further delay the parkway's ultimate completion. Mounting pressure to open the highway forced the Justice Department to begin deliberations on such matters as what it meant in legal terms to "complete" a road, whether the OPB&G could engage in law enforcement on the memorial highway while it was still technically under the jurisdiction of the Department of Agriculture, or, conversely, whether the BPR could legally work on the road after transferring it to the OPB&PP. The various agencies involved in the memorial highway project, however, were anxious to curry public approval and quiet congressional critics by opening the roadway as soon as possible, and in no case later than the official inauguration of the bicentennial celebration on February 22. The BPR began allowing the public to drive on completed stretches of the highway south of Alexandria in December 1931, but banned traffic from the northern section because of ongoing construction and problems with congestion around the still-uncompleted cloverleaf. The entire length of the parkway was declared open to the public on January 16, 1932, with the OPB&PP providing law enforcement services. President Hoover led an impressive

²⁹⁰ "\$2,700,000 Asked to Buy Areas on Memorial Blvd," Washington Evening Star 11 January 1931; "\$7 An Inch For New Highway Attacked At Hearing On Bill; Simmons Says Cost of Mount Vernon Road Would Make Washington Turn in Grave," Washington Evening Star, 18 January 1932; "Highway Project Needs More Funds," Washington Evening Star 13 February 1931; "Efforts to Save River Front Land," Alexandria Gazette, 21 February 1931; "Highway Bill Likely to Pass," Washington Herald, 24 February 1931; "Senators to Push Vote on Memorial Roadway Measure," Washington Post, 24 February 1931; "Mt. Vernon Road Bill Vote Is Slated for Today," Washington Evening Star 24 February 1931; "The Memorial Boulevard" [editorial], Washington Post, 25 February 1931; "The Memorial Boulevard from Mount Vernon" [editorial], Washington Times 28 February 1931; "House O.K.'s Fund of \$2,700,000 for Mount Vernon Route," Washington Evening Star 2 March 1931.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 136)

motorcade consisting of the bicentennial commission and other dignitaries down the parkway to Mount Vernon, where he informally dedicated the memorial highway.²⁹¹

The BPR restricted public access to the section between Washington and Alexandria to Saturday afternoons and Sundays through May 1 to avoid interfering with the final construction and planting crews. This regulation generated considerable protest on the part of locals and tourists alike, since the Washington to Alexandria stretch was by far the most heavily used portion of the highway, immediately replacing U.S. Highway 1 as the favored route between the two cities. BPR Chief MacDonald pleaded with the public to be patient, insisting the restriction was also a matter of public safety mandated by the heavy truck traffic involved in the final tree planting operations, which would begin in earnest during the first week of March. Bowing to public pressure, the BPR decided to open the entire parkway to daytime use on March 16.²⁹² The parkway remained closed at night until May 6, when the lighting system was finally completed, permitting round-the-clock-use.²⁹³ Simonson's forces finished their planting and seeding work by the end of June. With the exception of some minor drainage work around the Highway Bridge and the addition of auxiliary parking facilities along the state highway approach to Mount Vernon from the south, the BPR considered its job done. Simeon D. Fess, Vice-Chairman of the U.S. Bicentennial Commission and Secretary of Agriculture Arthur Hyde officially conveyed jurisdiction over the parkway to OPB&PP Director Ulysses S. Grant III effective July 1, 1932. The BPR closed its field office in the Alexandria Torpedo Station on August 1. BPR Chief MacDonald urged Grant to hire one or two of the landscape architects who had worked on the project to ensure the parkway was maintained according to the designers' intentions. MacDonald was unwilling to part with Simonson, but recommended his assistant George B. Holley as the second-most qualified man for the job. MacDonald also

²⁹¹ "U.S. May Deliver Highway to Grant," Washington Evening Star 15 November 1931; "Mt. Vernon Road Paving Completed," Washington Evening Star 19 December 1931; "Legal Problems May Halt Opening of Parkway," Washington Evening Star 26 January 1932; letter, MacDonald to Grant, 16 January 1932 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives). OPB&PP policing duties recorded in Annual Report of the Director of Public Buildings and Public Parks of the National Capital, 1932 (Washington, D.C.: Government Printing Office, 1932), 29. The BPR took numerous photographs of Hoover's motorcade and the January 16, 1932 unofficial dedication ceremonies. Simonson used one in his "Final Report," (plate 150B) and the rest can be found in U.S. Bureau of Public Roads Prints, RG 30N, Highway Transport 1900-1953: Mount Vernon Memorial Highway, Still Pictures Division, National Archives.

²⁹² "Memorial Paving Will Stay Closed," Washington Evening Star, 23 February 1932; "Mt. Vernon Road to Be Open Soon," Washington Evening Star 29 February 1932; "Mt. Vernon Highway Opens Permanently," Washington Herald, 17 March 1932; letter, MacDonald to Grant, 16 January 1932; letter, Treadway to Grant, 24 February 1932; letter, Secretary of Agriculture Hyde to Grant, 16 March 1932 (all in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives).

²⁹³ "New Boulevard Open Tonight," Washington Times, 6 May 1932;

encouraged Grant to hire assistant landscape architect Ralph Barrack, who had worked on the project since May 1931.²⁹⁴

Dedication

The official dedication ceremony was delayed until November 15, 1932. Bicentennial commission members, federal officials, highway engineers from across the country, and numerous state, local, and national politicians were in attendance (Figure 155), as were representatives of the DAR and other organizations that had contributed memorial trees or expressed patriotic interest in the project. Landowners who donated property to the memorial highway project were also invited to the official rites. Wilbur Simonson, Gilmore Clarke, and Jay Downer were all present, as were contingents from the BPR, the NCP&PC, and the Commission of Fine Arts.²⁹⁵ Nine-year-old Alice B. Dorsey of Baltimore, Maryland sprinkled earth gathered from Washington's birthplace, Valley Forge, Fort Necessity, Cambridge Common, and other sites associated with the first president at the foot of a boulder that the BPR had brought down from Washington's Patowmack Canal at Great Falls and placed in front of the entrance to Mount Vernon (Figures 156-157). Attached to the boulder was handsome bronze plaque commemorating the highway's completion (Figure 158).²⁹⁶ Senator Fess, Secretary of Agriculture Hyde, OPB&PP Director Grant, and American Association of State Highway Official's president Everett all gave speeches (Figures 159-160). Hyde lauded the new roadway as "The most fitting of all possible approaches to this national shrine, a broad avenue, partaking, in the magnificent sweep of its curves and the smoothness of its broad surface, of the harmony and character of the proud river whose bank it follows."²⁹⁷

²⁹⁴ Letter, MacDonald to Grant, 31 May 1932; Letter Arthur Hyde to Simeon D. Fess 30 June 1932; Letter, Fess to Grant, 30 June 1932; memo, Simonson to Toms, 2 September 1932 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives).

²⁹⁵ "Dedicate Highway to Mount Vernon," Washington Evening Star 15 November 1932; "Mount Vernon Memorial Highway Dedicated at Rites," Washington Post 16 November 1932; "M. B. Harlow Succumbs to Heart Attack," Alexandria Gazette (undated clipping from 1931, Mount Vernon Memorial Highway File, MVLA archives); miscellaneous invitations in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives.

²⁹⁶ "Dedicate Highway to Mount Vernon," Washington Evening Star 15 November 1932; "Mount Vernon Memorial Highway Dedicated at Rites," Washington Post 16 November 1932.

²⁹⁷ Hyde quoted in The Official Record of the United States Department of Agriculture, vol. 11, no. 49 (December 1932), reprinted in Simonson, "Final Report," plate 150-Dd.

Reception and Influence

The popular and professional press hailed the highway's completion on both practical and patriotic grounds (Figures 161-164). The Washington Post declared, "Among the tributes that have been paid to George Washington during this bicentennial year none is more fitting than the construction of the Mount Vernon Memorial Highway."²⁹⁸ Detailed articles on the parkway's design and construction appeared in American Highways, American City, Engineering News-Record, Journal of the American Concrete Institute, Parks and Recreation, Landscape Architecture, American Civic Annual, and The Military Engineer.²⁹⁹ The Engineering News-Record proclaimed it a "A Notable Highway" and observed that its advanced design would "exemplify modern practice in road structure and construction."³⁰⁰ American Highways asserted, "This modern motorway to Mount Vernon demonstrates the practical wisdom of combining beauty with utility in highway building."³⁰¹ The American Magazine of Art emphasized the aesthetic side of the issue, printing a series of images of the memorial highway's bridges and landscaping in a special section devoted to "Civic Art."³⁰²

Even after the initial excitement over the memorial highway's construction and completion began to wear off, the BPR continued to promote Mount Vernon Memorial Highway as a model for modern arterial highway design. Illustrations from the memorial highway project dominated Roadside Improvement, a detailed Department of Agriculture publication on modern highway landscaping put together by Simonson and BPR engineer R. E. Royall to promote the design principles epitomized by Mount Vernon Memorial Highway (Figures 165-167).³⁰³

²⁹⁸ "Mount Vernon Highway" [editorial] Washington Post, 15 November 1932.

²⁹⁹ "The Mount Vernon Memorial Highway," Engineering News-Record 107 (July 23, 1931): 124-27; "The Mount Vernon Memorial Highway," American Highways 11 (October 1932): 11-13; Wilbur Simonson, "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," American City 43 (October 1930): 85-88; R. E. Toms and J. W. Johnson, "The Design and Construction of The Mount Vernon Memorial Highway," Journal of the American Concrete Institute 4 (April 1932): 563-84; Toms and Johnson, "Design and Construction of Mount Vernon Memorial Highway," Parks and Recreation 15 (May 1932): 537-45; Gilmore Clarke, "The Mount Vernon Memorial Highway," American Civic Annual, 1932, 83-87; R. E. Royall, "The Mount Vernon Memorial Highway," The Military Engineer 24 (May-June 1932): 238-42.

³⁰⁰ "A Notable Highway," Engineering News-Record 107 (July 23, 1931), 122; "The Mount Vernon Memorial Highway," Engineering News-Record 107 (July 23, 1931), 124.

³⁰¹ "The Mount Vernon Memorial Highway," American Highways 11 (October 1932), 11.

³⁰² Clarke, "Our Highway Problem," The American Magazine of Art 25 (November 1932), 287-90.

³⁰³ U.S. Department of Agriculture, Roadside Improvement: U.S. Department of Agriculture Miscellaneous Publication No. 191 (Washington, D.C.: Government Printing Office, 1934).

Photographs of the memorial highway also figured prominently in Laurence Hewes' American Highway Practice, which served as one of the standard American highway construction textbooks for many years, going into multiple reprintings after its initial publication in 1942.³⁰⁴ Simonson continued to work for the BPR and its successor agencies for the rest of his career, serving as chief of the federal highway program's roadside development section and vigorously promoting the integration of aesthetic and engineering concerns as exemplified in the development of Mount Vernon Memorial Highway. After 1932, Simonson's influence was far greater on federal highway design policies than on American parkway development. He served as secretary of the Highway Research Board Committee on Roadside Development from 1933-1950 and as secretary of the American Association of State Highway Officials Operating Committee on Roadside Development from 1946-1956. Simonson also authored numerous articles urging highway engineers and state and federal highway departments to practice what he called "complete highway" design, which included equal attention to safety, utility, economy, and beauty. Many of these articles specifically cited Mount Vernon Memorial Highway as an exemplar of modern motorway design.³⁰⁵ His most accessible writings on the subject appeared in a series of articles promoting roadside improvement appeared in Landscape Architecture from 1933-1953.³⁰⁶ Simonson retired from federal service in 1965 after 36 years with the BPR and its successor agencies. Simonson was fondly regarded by colleagues and widely respected for his efforts to improve American arterial highway development through the close cooperation of engineers and landscape architects. Acknowledging this contribution, the U.S. Department of Transportation's official history of the federal road-building program singled Simonson out as playing "a decisive role in the movement for improved roadsides in the United States."³⁰⁷

³⁰⁴ Laurence Hewes, American Highway Practice (New York: John Wiley & Sons, 1942).

³⁰⁵ Wilbur Simonson, "Evolution of Modern Highway Design in the United States," in Landscape Design and Its Relation to the Modern Highway, ed. J. Carter Hanes and Charles Connors (New Brunswick, N.J.: Rutgers University College of Engineering, 1952), 10, 14, 15.

³⁰⁶ Wilbur Simonson, "Planning for Roadside Improvement," Landscape Architecture 23 (July 1933), 247-57; Simonson, "Some Desirable Policies in Roadside Development," Landscape Architecture 24 (January 1934), 91-99; Simonson, "The Roadside Picture: A Hindrance to Traffic? Or an Inspiring Asset to Travel?" Landscape Architecture 30 (October 1939), 26-36; Simonson, "Advanced Designs for Post-War Highway Needs," Landscape Architecture 33 (July 1943), 130-31; Simonson, "Highway Development in Broad-Scale Planning," Landscape Architecture 45 (July 1953), 162-65; Simonson and R. E. Royall, "Roadside Improvement," Landscape Architecture 24 (July 1934), 198-209.

³⁰⁷ Biographical information on Simonson gathered from credits in assorted periodicals and his retirement notice in the staff newsletter "The News in Public Roads 1965," supplied by Richard Weingroff, Program Development, U.S. Department of Transportation; quote, U.S. Department of Transportation America's Highways 1776-1976: A History of the Federal-Aid Program (Washington, D. C.: Government Printing Office, 1976) fn. p. 134.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 140)

Mount Vernon Memorial Highway's influence on subsequent parkway design was hard to trace in specific design terms. Mount Vernon Memorial Highway was inarguably the first modern motor parkway constructed by the federal government, but in many ways, the memorial highway's strong debt to the WCPC parkways was both the source of its success and an argument for its modest impact in actual design terms. Aside from the hydraulic fill sections, the memorial highway contributed little of significance to the physical art of parkway design. While the memorial highway experience may have influenced BPR highway design, subsequent federal parkway development proceeded more directly from the original WCPC precedents. Clarke and Downer served as consultants on the development of Colonial Parkway, while the Blue Ridge Parkway landscape was largely the creation of Stanley Abbott, another WCPC alumnus. National Park Service (NPS) landscape architects Thomas Vint, Kenneth C. McCarter, and John B. Woskey inspected the memorial highway as part of their 1930 tour of East Coast parkways, but since the landscape features were not yet developed, they only spent a week in Washington compared to six weeks in Westchester County.³⁰⁸ Because of its physical similarity to the WCPC parkways, the memorial highway's primary contributions to American parkway development were more conceptual and organizational. The expensive and highly touted project established the federal government as a major force in American parkway development. Moreover, as the first historic and commemorative parkway the memorial highway introduced new conceptual elements to parkway design that had few, if any precedents in either WCPC parkway design or the older Olmstedian tradition. Mount Vernon Memorial Highway's historical associations helped legitimize NPS efforts to expand its East Coast domain by creating parks that combined history and nature.

The NPS immediately began embellishing on this formula in the development of Skyline Drive (1931-1939), Colonial Parkway (1931-1939), Blue Ridge Parkway (1936-1987), and the Natchez Trace Parkway (1937-1990s). The Skyline Drive and Blue Ridge Parkway soon took the memorial highway's place as the preeminent federal parkways. Mount Vernon Memorial Highway's ambiguous influence on subsequent federal parkways may have reflected the park service's lack of interest in traditional suburban parkways. The memorial highway's subsequent status may have suffered additionally from its status as a belated addition to the NPS parkway family. Lacking any NPS involvement in its conception, design, construction, or early history, Mount Vernon Memorial Highway has always occupied an ambiguous position in NPS history. Transferred by the BPR to the OPB&PP, the parkway changed hands again a year later when that agency was dissolved and the parkway was assigned to the National Capital Parks office of the National Park Service. NPS authors tended to downplay it as a heavily-trafficked, commuter-oriented "metropolitan type of parkway" as opposed to the

³⁰⁸ Gilmore Clarke discussed the itinerary of this trip in a letter to Toms, 29 December 1930 (Bureau of Public Roads Classified Central File, 1912-50; 420 Reports Mt. Vernon, Virginia, 1925-40; Box 1401, Record Group 30, National Archives).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 141)

more exalted "pure scenic type" epitomized by the Blue Ridge Parkway.³⁰⁹ With the federal government responsible for the development of urban parkways in the nation's capital, Mount Vernon Memorial Highway was followed by the completion of Rock Creek and Potomac Parkway (1913-1936), Suitland Parkway (1942-1944), the Baltimore-Washington Parkway (1950-1954), and George Washington Memorial Parkway (1930-1970), all joint BPR-NPS projects.³¹⁰ The Suitland and Baltimore-Washington parkways were emphatically oriented more toward arterial transportation needs than generally recreational development, while even the George Washington Memorial Parkway would eventually serve primarily as a commuter route.

³⁰⁹ Clarke, "The Mount Vernon Memorial Highway," American Civic Annual, 1932, 87; Dudley Bayliss, "Parkway Development Under the National Park Service," Parks and Recreation 20 (February 1937), 258; Stanley Abbot, "Parkways--Past, Present, and Future," Parks and Recreation 31 (December 1948), 681-91; Bayliss, "Planning Our National Park Roads and Our National Parkways," Traffic Quarterly (July 1957), 422-25.

³¹⁰ Washington-area parkway dates are from Jere Krakow, Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suitland Parkway, Baltimore-Washington Parkway (National Park Service, U.S. Department of the Interior, 1990).

GEORGE WASHINGTON MEMORIAL PARKWAYBackground and Authorization

Before Mount Vernon Memorial Highway was finished, Congress authorized the creation of George Washington Memorial Parkway. The proposal for George Washington Memorial Parkway (GWMP) called for the creation of parkways on both sides of the Potomac River from Mount Vernon upstream to Great Falls (Figure 168). A bridge at Great Falls and a ferry between Fort Washington and Fort Hunt would enable motorists to make a circle tour of approximately 60 miles. As with the memorial highway, George Washington Memorial Parkway advocates secured Congressional approval by combining patriotic appeals with concerns for natural resource protection, recreation, and transportation. The 1930 Capper-Cramton Act authorized the expenditure of up to \$9 million to provide for the comprehensive development of parks, parkways, and playgrounds in Washington, D.C. and adjacent areas of Maryland and Virginia, with \$7.5 million allocated directly for GWMP. An additional \$16 million was authorized for park development within the District of Columbia. The George Washington Memorial Parkway appropriations were contingent on matching funds to be provided by the states of Maryland and Virginia, or the affected town and county jurisdictions. Due to funding problems and a variety of political and legal obstacles, the development of George Washington Memorial Parkway lagged on for forty years. While the parkway was not completed as originally envisioned, the segments that were developed function admirably in their intended roles as transportation corridors, recreational amenities, and scenic preserves.³¹¹

As was the case with Mount Vernon Memorial Highway, the 1930 George Washington Memorial Parkway bill was the culmination of many decades of lobbying efforts. Great Falls' history as a tourist destination dated back at least to the end of the eighteenth century, when Washington's efforts to build a canal around the fall attracted national and even international curiosity.³¹² Washington's dream of turning the Potomac into the country's principal east-west thoroughfare came to naught, but preserving the ruins of the Patowmack Canal was frequently

³¹¹ U.S. Congress, Senate, George Washington Memorial Parkway and Park Development of the National Capital (71st Cong., 2d Sess., 17 April 1930, Report No. 458 [to accompany H.R. 26]); "George Washington Memorial Parkway," pamphlet produced by National Capital Park and Planning Commission, 1930; the Capper-Cramton Act's official designation is Public Law 71-284, May 29, 1930, U.S. Statutes at Large 46: 482-85. For a more detailed account of the evolution of George Washington Memorial Parkway, with particular emphasis on legislative and administrative issues, see Barry Mackintosh, "George Washington Memorial Parkway: Administrative History" forthcoming from History Division, National Park Service, Washington, D.C. [citations refer to March 1996 draft copy]. Since Mackintosh is providing a comprehensive history of the development of George Washington Memorial Parkway from 1930-1996, this chapter will simply offer a brief overview of the period.

³¹² Netherton et al, Fairfax County, 203-06; Gutheim, The Potomac, 8, 252-55.

cited as one of the reasons for extending GWMP to Great Falls.³¹³ The Chesapeake and Ohio (C & O) Canal might have fulfilled Washington's goal of transforming the Potomac River into a transportation route of national significance, had not legal, technical, and financial problems delayed completion until 1850, when the development of American railroads rendered it virtually obsolete. Tourists and local excursionists made use of the C & O Canal to travel to Great Falls, which continued to be a popular destination throughout the nineteenth century. The C & O canal remained in use until the early twentieth century, but revenues declined steadily. By the 1920s canal-borne commerce had all but disappeared. The federal government acquired the property in 1938 after damage from severe flooding forced the company to cease operations in the mid 1920s. Most proposals for a parkway along the Maryland shore of the Potomac included provisions for transforming the C & O Canal into a recreational waterway.

The 1901 Senate Park Commission advocated preserving Great Falls as a national park. The commission also recommended connecting Washington and Great Falls with "a continuous river drive" to preserve and provide access to the Potomac Palisades, asserting, "The beauty of the scenery along the route of this proposed noble river-side improvement is so rare and, in the minds of the Commission, of so great value, not only to all Washington, but to all visitors, American and foreign, that it should be safeguarded in every way." At the turn of the century, the only way to reach the falls from the District by private vehicle was to take Conduit Road (now MacArthur Boulevard) and then follow a round-about route that skirted much of the most impressive scenery. The roads on the Virginia side, meanwhile were located so far back from the river that they provided no access or vistas. The falls themselves were reached by a private toll road leading from the old Georgetown Pike.

The commission's focus on the District of Columbia forced it to limit recommendations for the Virginia palisades to the general suggestion that the cliffs should be protected from quarrying and the hilltops should be preserved in a naturalistic state. The commission did, however, propose a development scheme for the D.C./Maryland side of the river all the way from Georgetown to Great Falls. The commission advocated the construction of a pleasure drive along the rim of the palisades and the acquisition of all undeveloped land between the drive and the river (Figures 169-170). A lower drive would parallel the canal and yet another drive might be provided along the actual shoreline where conditions permitted. The top level would consist of a relatively traditional boulevard to serve through traffic and provide street frontage for residential development. It would also incorporate the existing trolley line, with occasional changes in alignment to produce more attractive vistas. The lower drive and surrounding landscape would be developed informally throughout. The relationship between the different

³¹³ Harrison, Landmarks of Old Prince William, 547; Netherton et al, Fairfax County, 203-206; Gutheim, The Potomac, 252-57.

levels and modes of transportation would vary in accordance with changes in terrain. The commission included attractively rendered sections in its report to underscore its assertion that "always the effect would be picturesque and always the plunging views from the upper lines would be fine." The report emphasized the need to prevent further development before the natural and picturesque qualities of this stretch of the Potomac disappeared. The commission also recommended incorporating the C & O Canal into the parkway development.³¹⁴

The creation of the National Capital Park and Planning Commission in 1926 with the express purpose of providing for "the comprehensive, systematic, and continuous development of the park, parkway, and playground systems of the National Capital and its environs," together with the threat that a private power company might develop hydroelectric dams above and below Great Falls, produced concerted action to preserve the falls and palisades. The hydroelectric proposal had been in the works for several years and was supported in large part by the U.S. Army Corps of Engineers. Dam proponents maintained that the hydroelectric potential of the falls would spur regional development and argued that replacing the rapids and waterfalls with a placid reservoir would provide safer and more appealing opportunities for swimming and boating. Major General Edgar Jadwin, the corps's chief engineer, termed the parkway project a "prodigal" waste of resources that could be put to use to power great industrial developments, cheapen the cost electricity in the mid-Atlantic, and generate untold millions in tax revenues. The proposed dams would eliminate costly flooding problems and provide an even better source of drinking water than the existing system. The National Capital Park and Planning Commission disputed the need for such extensive hydroelectric development in the Washington area and opposed the project as incompatible with its own plans to preserve the area as a natural park.³¹⁵ The hydroelectric project was also opposed by most major planning and conservation organizations. The National Park Service, the Department of the Interior, and the Commission of Fine Arts all went on record in favor of preserving the falls in their natural state. Among the groups promoting legislation to prevent hydropower development were American Society of Landscape Architects, the American Institute of

³¹⁴ U.S. Congress, Senate Committee on the District of Columbia, The Improvement of the Park System of the District of Columbia (57th Cong., 1st Session. Washington: Government Printing Office, 1902), 93-97.

³¹⁵ NCP&PC quote is from anti-power development resolution adopted by the NCP&PC on 15 December 1928 (reprinted in U.S. Congress, Senate Committee on the District of Columbia, George Washington Memorial Parkway: Hearings before the Committee of the District of Columbia . . . on H.R. 26 [71st Cong., 2nd sess., 13 & 21 March 1930], 83); Jadwin's August 1929 report is reprinted in the same document, pp. 82-86; National Capital Park and Planning Commission, Annual Report of the National Capital Park and Planning Commission, 1929, 41.

Architects, the Garden Club of America, the General Federation of Women's Clubs, the Izaak Walton League, and most local chambers of commerce and civic associations.³¹⁶

In May 1928 Michigan Rep. Louis C. Cramton, a strong park advocate and chairman of the House Subcommittee on Parks and Related Appropriations, secured passage of a bill forbidding the Federal Power Commission from issuing permits for power development in the vicinity of Great Falls until the NCP&PC and the power commission considered the matter further. Cramton also introduced legislation to create a parkway along both sides of the Potomac from Mount Vernon to Great Falls in cooperation with the states of Maryland and Virginia. Cramton rejected the notion that a man-made reservoir was an adequate substitute for the natural beauty of the Potomac at Great Falls.³¹⁷ Driveways would be provided along the Maryland side, but the measure was clearly directed toward protecting Great Falls, the palisades, and the Potomac shoreline as a largely untouched nature reserve rather than as an intensively developed park facility. Cramton's proposal was overshadowed for the time being by the Mount Vernon Memorial Highway, which Cramton had opposed as too limited in its focus on building a road to Mount Vernon. Cramton's plan, which he developed with the assistance of the NCP&PC's Charles Eliot II and U.S. Grant III, was much broader in its concern for extensive natural resource protection and regional park development.³¹⁸ Cramton's first effort passed the House but the politicking to accomplish this feat took so long that time was too short to secure Senate approval before the end of the session.³¹⁹

Cramton introduced a similar bill in the next Congress. Once again, it received solid backing from conservation organizations and federal park and planning officials but was opposed by the hydropower interests and the Army Corps of Engineers. Major Brehon Somervell, Jadwin's successor as District Engineer, suggested that the revenue generated by the hydroelectric

³¹⁶ For a more complete listing, see U.S. Congress, Senate, George Washington Memorial Parkway and Park Development of the National Capital (71st Cong., 2d Sess., 17 April 1930, Report No. 458 [to accompany H.R. 26]), 8-9.

³¹⁷ U. S. Congress, House, Acquisition, Establishment, and Development of the George Washington Memorial Parkway (70th Cong. 2nd Sess., 14 February 1929, Report No. 2523 [to accompany H.R. 15524]), 3.

³¹⁸ U.S. Congress, Senate, George Washington Memorial Parkway and Park Development of the National Capital (71st Cong., 2d Sess., 17 April 1930, Report No. 458 [to accompany H.R. 26]), 4.

³¹⁹ "Plan to Preserve Great Falls Wins Committee Favor," Washington Evening Star 28 May 1928; "Congressional Record Report of Mt. Vernon Boulevard Bill," Alexandria Gazette, 22 May 1928; National Capital Park and Planning Commission, Work of the National Capital Park and Planning Commission/Statements of Lieut. Col. U. S. Grant, 3d Maj. Carey E. Brown, and Charles Eliot, 2d Before the Committee on the District of Columbia, House of Representatives, March 10, 1928 (Washington, D.C.: Government Printing Office, 1928), 17-19, 26. The failure of the initial Senate version was due more to scheduling constraints than outright opposition.

project would greatly reduce taxes in the surrounding jurisdictions, while the attractive reservoirs would raise the value of adjacent property. The increase in tax revenues could be used to expand park opportunities in the region on a much larger scale. NCP&PC director U.S. Grant III objected to Somervell's reasoning and expressed strong disagreement with his economic projections. The Senate Committee on the District of Columbia was clearly inclined to favor its chairman's proposal and demonstrate its support for the NCP&PC in the first big test of its influence and authority. A compromise of sorts was reached with the insertion of the so-called "Dempsey Amendment," which stipulated that authorization of the parkway would in no way preclude future development of hydroelectric power or navigation in the vicinity of Great Falls.³²⁰ The bill's supporters and the electric power company both recognized, however, that it would be virtually impossible to receive permission to develop hydroelectric facilities once the parkway was authorized.³²¹ The Senate passed Capper's bill on May 13, 1930. The House approved the Senate's amendments on May 22 and President Hoover signed the Capper-Cramton Act into law on May 29.³²²

The act authorized appropriations of up to \$7.5 million for the creation of George Washington Memorial Parkway, which would include "the shores of the Potomac, and adjacent lands, from Mount Vernon to a point above the Great Falls on the Virginia side, except within the city of Alexandria, and from Fort Washington to a similar point above the Great Falls except within the District of Columbia, and including the protection and preservation of the natural scenery of the Gorge and the Great Falls of the Potomac, the preservation of the historic Patowmack Canal, and the acquisition of that portion of the Chesapeake and Ohio Canal below Point of Rocks." The NCP&PC would acquire the land and transfer it to the OPB&PP for management purposes. The states of Maryland and Virginia, or smaller political jurisdictions thereof, were required to cover 50 per cent of the land acquisition costs. Land could be acquired by purchase or donation, and the NCP&PC was authorized to receive the transfer of federal properties to be included within the proposed reservation. The most notable of these, of course, was Mount Vernon Memorial Highway, which would be incorporated into the larger project upon its completion. The NCP&PC also hoped to acquire Fort Hunt and Fort Foote when the military completed its planned release of these properties. Fort Washington, the parkway's southern terminus on the Maryland side, was also scheduled for transfer to the NCP&PC. The NCP&PC included Fort Humphries on its map of potential federal lands to be

³²⁰ The Dempsey Amendment was introduced by Rep. S. Wallace Dempsey of New York, chairman of the House Rivers and Harbors Committee.

³²¹ U.S. Congress, Senate Committee on the District of Columbia, George Washington Memorial Parkway: Hearings before the Committee of the District of Columbia . . . on H.R. 26 (71st Cong., 2nd sess., 13 & 21 March 1930), 56-94; U.S. Congress, House Committee on Rules, George Washington Memorial Parkway. Hearing Before the Committee on Rules . . . on H.R. 26 (71st Cong., 2nd Sess. 15 January 1930), 20.

³²² Mackintosh, "George Washington Memorial Parkway: Administrative History," 26-28.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 147)

added to the parkway, but the military was not disposed to give up that facility, despite joint NPS-NCP&PC interest in extending Mount Vernon Memorial Highway south along the Virginia shoreline and on toward Washington's birthplace at Wakefield.³²³ Recognizing that it might be impossible, or at least exorbitantly expensive to acquire the entire Potomac shoreline within the stipulated boundaries, the NCP&PC was granted discretion to exclude parcels that it deemed non-essential. The NCP&PC could not begin expending federal money on the parkway until Maryland and Virginia made firm commitments to producing their share of the land acquisition funds. The bill included a provision allowing the federal government to advance the full amount of land acquisition and road construction costs on the condition that the money be repaid with eight years of expenditure. This measure was intended to facilitate rapid development while state legislatures worked to come up with their share of the money. Funds for highway construction on the Maryland side were to be channeled through the Federal-aid highway program. There was no mention of road construction on the Virginia side north of Memorial Bridge. Cramton and the NCP&PC had determined that road development along the Virginia Palisades was unnecessary and perhaps even undesirable.³²⁴ The parkway was to be developed in such a way that it would not preclude future utilization of the Potomac's hydroelectric resources or with the development of an inland waterway, if and when Congress decided to approve such action. The bill also gave the NCP&PC authority to acquire the proposed Great Falls bridge, paying the bridge company its original cost plus 10 per cent, and the possibility was left open that the federal government could build a public bridge if the toll bridge company decided not to proceed. The Capper-Cramton Act also authorized \$1.5 million for park, parkway, and playground development in the District of Columbia and its Maryland suburbs. Again, the state of Maryland was required to contribute equally toward projects within its jurisdiction.³²⁵

³²³ See map, "Potomac River Parks, Washington Region, from Mount Vernon, Past the City of Washington to Great Falls," in National Capital Park and Planning Commission, Annual Report of the National Capital Park and Planning Commission, 1929, 41; proposals to extend Mount Vernon Memorial Highway south are discussed in the previous chapter.

³²⁴ Cramton declared, "There is no thought of a road on the Virginia side from the District to Great Falls at Government expense. There is no need for it" (U.S. Congress, House Committee on Rules, George Washington Memorial Parkway. Hearing Before the Committee on Rules . . . on H.R. 26 [71st Cong., 2nd Sess. 15 January 1930], 17).

³²⁵ U.S. Congress, Senate, George Washington Memorial Parkway and Park Development of the National Capital (71st Cong., 2d Sess., 17 April 1930, Report No. 458 [to accompany H.R. 26]), quote, p. 7; "George Washington Memorial Parkway," pamphlet produced by National Capital Park and Planning Commission, 1930; Public Law 71-284, May 29, 1930, U.S. Statutes at Large 46: 482-85.

Promoting the Parkway

The NCP&PC quickly produced an attractive brochure explaining the project to the general public with considerable emphasis on its historic elements and symbolic significance, beginning with the requisite account of the first president's associations with Mount Vernon, Washington D.C., and the Patowmack Canal (Figure 171). The pamphlet laid out the terms of the Capper-Cramton legislation and provided brief descriptions of the park acreage to be acquired, noting that more exact surveys were being made and that financial commitments from the states were still in the offing. The NCP&PC explained its goal of providing public control over both banks of the Potomac, including all areas visible from the river between Washington and Great Falls. Park officials also hoped to acquire land along the stream valleys cutting back into the Potomac Palisades on the Virginia side. The commission figured the total would amount to 269 acres in Arlington County, approximately 2460 acres in Fairfax County, 3546 acres on the Maryland side north of Washington—including the C & O Canal as far north as Point of Rocks—and a 250'-wide, 341 acre parkway from the District south to Fort Washington. This would be added to the land already in federal ownership for Mount Vernon Memorial Highway and an additional 1641 acres to be acquired between the highway and the river. The brochure advised, "The proposed park lands have been chosen primarily to combine preservation of the outstanding scenic and historic features with appropriate access to these areas, leaving notable sites for private development." The latter statement referred largely to existing developments such as Wellington, Glen Echo, and the Cabin John subdivision.³²⁶

Popular accounts also called attention to the proposed parkway's historic and patriotic implications. A 1930 American Motorist article praised the parkway bill for protecting the beautiful scenery of the Potomac River and detailed the regions historic associations.³²⁷ Mount Vernon superintendent Clarence Phelps Dodge wrote an even more exuberant article for the February 1932 issue of American Forests, proclaiming, "This year of 1932, in which the Bicentennial of George Washington is celebrated, is a most fitting time to spread throughout the land the knowledge of the Potomac, a river identified with the life of the first President and so influential in aiding and shaping his character." Dodge went on to outline the conditions of the Capper-Cramton Act and describe the scenic, historic, scientific, and recreational attributes of the proposed parkway, listing Washington's many associations with Alexandria and repeating the usual account of his connections to Mount Vernon, Washington, and Great Falls. Dodge emphasized that George Washington Memorial Parkway was "the nation's parkway" and "a monument to the first president, visioned and created in his honor." He also promoted

³²⁶ National Capital Park and Planning Commission, "George Washington Memorial Parkway," Publicity brochure, 1930.

³²⁷ John Frazier, "The Park That is To Be," American Motorist 5 (October 1930), 24-25, 62-63.

an organization known as the George Washington Memorial Parkway Association, which had been formed to promote and solicit funds for the project throughout the country in a manner reminiscent of the original Mount Vernon Avenue Association's efforts. Any donations would be administered by a second organization, the George Washington Memorial Parkway Fund.³²⁸

Charles W. Eliot II, the NCP&PC's director of planning, provided more specific development details in an article he wrote for Landscape Architecture in June 1932. Eliot's piece was published alongside Gilmore Clarke's account of the design and development of Mount Vernon Memorial Highway, which, Eliot noted, illustrated "the hopes which are entertained for the whole future project including both banks of the Potomac River from Mount Vernon to Great Falls." Eliot asserted that the parkway was intended to "preserve and make available the remarkable inspirational values along some twenty-eight miles of the Potomac River Valley." Eliot maintained that the proposed parkway encompassed a unique array of "scenic views, scientific areas, and recreational opportunities." He also elaborated its historical significance, asserting "No area in the United States combines so many historical monuments in so small a district as the Potomac River Valley in the Washington Region." Eliot praised the view from Fort Washington up and down the river from the Washington Monument to Mount Vernon, and suggested that the grounds be used as a picnic area or other recreational facility when the military completed its planned withdrawal from the facility. Eliot envisioned a parkway drive along the Maryland shore paralleling Mount Vernon Memorial Highway, with occasional lengthy fills and bridges constructed in a similar fashion. The motorway and surrounding landscaping would closely resemble Mount Vernon Memorial Highway, with grade-separated interchanges, strictly limited access, and a right-of-way of at least 200'. Eliot claimed that the Maryland parkway would be "more varied in alignment and grades than its counterpart" and noted that the differing topography on the opposing shores would create an appealing contrast.³²⁹

The parkway would follow the waterfront through Washington, taking advantage of existing roadways along the Potomac parks and Rock Creek and Potomac Parkway. Canal Road would provide an outlet to the proposed Palisade Parkway, with its double road system of highways and park roads along the C & O Canal and the top of the bluff. The parkway would follow a dual course in this manner until a spot about half a mile past the District line, where the constricted terrain and steep banks posed formidable obstacles. From this point to Cabin John, motor traffic would make use of the existing Conduit Road. A new bridge was proposed to avoid placing too much stress on the historic aqueduct structure. Since Conduit Road drifted away from the river for a long stretch after Cabin John, a new parkway drive would be built

³²⁸ Clarence Phelps Dodge, "The George Washington Memorial Parkway," American Forests 38 (February 1932), 85-88, 128.

³²⁹ Eliot, "The George Washington Memorial Parkway," Landscape Architecture 22 (April 1932), 191-200.

along the edge of the bluffs to provide views of the river and canal. Eliot suggested that a golf course might be developed in the broad relatively flat area now largely occupied by the parkway/beltway interchange. Where the Potomac gorge deepened and the scenery became rugged and wild in character north of Little Falls, the driveway would again tend away from the river banks and make use of Conduit Road or the Washington aqueduct right-of-way on up to Great Falls, where the proposed bridge would take motorists across the river to view the falls from the Virginia side.³³⁰

Eliot maintained that the parkway on the Virginia shore would serve primarily as a nature preserve with little or no road development in the foreseeable future. Traffic would use existing roads located far back from the edge of the palisades, since the rugged terrain and deeply cut stream valleys would make road construction both very costly and "very destructive of natural beauty." Eliot predicted that a parkway road might some day be built along the southern edge of the reservation, but urged that the shoreline and palisades be reserved for pedestrians, horseback riders, and boaters. In the meantime, access to picnic areas and overlooks might be provided in the form of dead end park roads leading to selected viewpoints. Eliot urged rapid acquisition of the Virginia portion because quarry operators were still tearing away at the cliffs and disfiguring the scenery between Chain Bridge and Key Bridge. The ledges they had created along the Potomac might be turned to advantage for a road location, Eliot noted, if such development were deemed advisable.³³¹

Parkway backers continued to emphasize the project's historic and commemorative functions throughout the 1930s, especially in public appeals for support. In 1935 NPS Director Arno B. Cammerer declared that the parkway was "perhaps the greatest memorial yet proposed to honor our First President." Detailing the region's natural attractions and historical associations, Cammerer proclaimed that George Washington Memorial Parkway would provide "a 50-mile circuit of the choicest scenery in greater Washington, every foot of it hallowed by memories of the Father of His Country." Cammerer lamented the slow progress in acquiring land for the parkway and warned, "Each month of delayed action invites disaster, by leaving exposed to the mercies of all comers sections logically belonging to the great national highway." Cammerer cast GWMP as a project of national importance. Privately, the NPS director told his assistant Conrad Wirth that the project was "not national park caliber," characterizing the parkway as a recreational development for citizens of the nation's capital.³³²

³³⁰ Eliot, "The George Washington Memorial Parkway," Landscape Architecture 22 (April 1932), 191-200.

³³¹ Eliot, "The George Washington Memorial Parkway," 191-200; access roads to picnic areas and overlooks mentioned in Frazier, "The Park That Is To Be," 25.

³³² Arno B. Cammerer, "Push the Washington Parkway." Review of Reviews (May 1935), ; memo, Cammerer to Wirth, 6 August 1935 (National Park Service, Central Classified File 1933-1949, National

GEORGE WASHINGTON MEMORIAL PARKWAY: DESIGN AND DEVELOPMENT

Progress on the parkway was perilously slow throughout the 1930s. Capper and Cramton twice introduced legislation to advance the NCP&PC \$3 million in federal funds to move the project along by purchasing key properties while the state and local governments arranged to provide their contributions, but Congress was unwilling to approve the appropriations without legal commitments from cooperating governments. The bill's insistence on parallel contributions became a significant obstacle to development until the legislation was amended to provide more flexibility after World War II. In the meantime, the Great Depression put additional pressures on state and federal spending. Congress did approve a \$1 million outlay to the NCP&PC for 1931, however. The NCP&PC allocated \$237,700 of this money toward the development of George Washington Memorial Parkway, expending it over a period of six years, primarily for land acquisition. The NCP&PC prepared an elaborate illustrated report on the project for Franklin Delano Roosevelt when he assumed office, and escorted the president on a tour to Great Falls, but even NCP&PC chairman Frederic Delano was unable to influence his nephew to expedite the project.³³³ The emphasis of parkway developers throughout the 1930s was on land acquisition, with planning for the eventual construction of roadways and related features taking a secondary role.³³⁴

The primary exception to this general resource protection focus was the desire to provide a direct highway connection between Key Bridge and Columbia Island. This was seen as a much needed measure to ease the cross-river traffic burden on Key Bridge and Georgetown by encouraging motorists to cross directly into Washington via Arlington Memorial Bridge. It would also greatly facilitate traffic between Rosslyn and Alexandria by providing a direct connection with Mount Vernon Memorial Highway. Extending the parkway drive just above Rosslyn to Spout Run, and using the valley of Spout Run as an express route to the Lee Highway would further improve regional traffic patterns. Initiating the parkway development on the Arlington shore from Columbia Island to Spout Run would not only serve a useful traffic function, it would help prevent incompatible development along the Virginia shoreline directly across from Washington and Georgetown. In 1930 an oil company secured an option for land to build a pier and storage facilities just above Key Bridge and was threatening to develop the site. Capper, Cramton, the NCP&PC, and the D.C. Board of Commissioners objected to the oil company's proposal, but Rosslyn commercial interests viewed it as a much-needed economic stimulus for the community. Mount Vernon Memorial Highway backer Rep.

Parkways: George Washington Memorial, Box 2774, RG 79, National Archives).

³³³ Mackintosh, "George Washington Memorial Parkway Administrative History," 30-33.

³³⁴ U.S. Congress, Senate, To Amend Act Relating to George Washington Memorial Parkway (71st Cong., 3d Sess., 18 February 1931, Report No. 1658 [to accompany S. 5740])

R. Walton Moore sided with his pro-construction constituents, arguing that it was unfair to discourage development for a parkway that might never be built given its complex funding requirements. Since the federal government controlled the Potomac River to the Virginia shoreline, it invoked the threat of refusing permission to build wharves to access the oil company's facilities. The oil company was discouraged from pursuing its proposed development, and the riverfront land was eventually acquired for the parkway. The NPS evicted a squatter community from Theodore Roosevelt Island in the summer of 1934.³³⁵ A severe spring flood in 1936 swept away many other ramshackle structures along the riverfront, further clearing the way for parkway development.³³⁶

The oil facility threat and the desire to provide a roadway between Rosslyn and Arlington Memorial Bridge provided the impetus for the first significant parkway development using the funding formula stipulated by the Capper-Cramton Act. In 1932 the NCP&PC allocated \$50,000 for land acquisition in the vicinity of Key Bridge. This federal outlay was matched by pledges of \$25,000 each from Arlington County and the state of Virginia. The Department of the Interior eventually added an additional \$278,000 in Public Works Administration funds allocated from the \$5 million road-building budget the park service was granted in the fiscal 1935 Emergency Appropriation Act. The major design concerns of this initial section involved fitting the four-lane parkway along the relatively narrow shelf of land alongside the Little River channel, and figuring out how to get that parkway under Key Bridge. After overcoming initial objections by the Army Corps of Engineers, the BPR was granted permission to fill in enough of the channel to provide room for the parkway. In order to fit the parkway into the sloping, constricted terrain with minimal disruption of the existing contours, the BPR separated the north and south bound lanes for a short stretch alongside Theodore Roosevelt Island with a relatively narrow median, placing the southbound lanes slightly higher on the hillside. This minimized the need for excessive cuts or fills and allowed parkway builders to preserve a line of attractive trees, which were protected with rustic stone tree wells on the steeper sections. Rustic log guardrails were provided along the river side of both roadways. The massive reconstruction of this area during the 1990s to provide additional traffic lanes significantly reduced the size of the median, brought the two roadways closer to the same level, and

³³⁵ Local support for extending the parkway drive to Rosslyn and Spout Run was expressed in letters from T. S. Settle to Arno Cammerer 20 February 1934 and 3 July 1934; the Analostan/Theodore Roosevelt Island squatter community is described in memo, Frank T. Gartside, Assistant Superintendent, National Capital Parks to Arthur Demaray, 10 July 1934 (all in National Park Service, Central Classified File 1933-1949, National Parkways: George Washington Memorial, Box 2774, RG 79, National Archives). Discussions of Sun Oil Company's plans to build a facility on the Rosslyn waterfront appear in U.S. Congress, House Committee on the District of Columbia, Regulating the Erection of Structures on the Potomac River Adjacent to the Proposed George Washington Memorial Parkway in the District of Columbia. Hearings Before the Committee on the District of Columbia . . . on S.J. Res. 182 and H.J. Res. 345 (71st Cong., 2nd Sess., 18 & 20 June 1930).

³³⁶ "A Silver Lining" [editorial], Washington Post 23 March 1936.

resulted in the elimination of the trees that had long given this stretch of the parkway a distinctive character.³³⁷

The NCP&PC initially considered tunnelling under the bluff where Key Bridge connected to the Rosslyn traffic circle, but the park service and the Commission of Fine Arts felt that a tunnel would be unattractive and inconsistent with the desire to maintain a visual connection between the parkway and the Potomac River. The park service and the Commission of Fine Arts promoted an alternative strategy of cutting back the bluff and constructing an additional arch over both lanes of parkway traffic. After carefully weighing the costs and benefits, the Interior Department appropriated \$334,000 for this solution in 1937. The contract for grading, draining, and incidental construction on the Arlington Memorial Bridge to Key Bridge segment was let to the Harry T. Campbell & Sons Company of Towson, Maryland in July 1935.³³⁸ The appropriation was insufficient to build an adequate permanent bridge across Boundary Channel to Columbia Island, so a temporary trestle bridge was erected. The parkway road itself was completed by Corson & Gruman Company and opened in January 1939. Delashmutt Brothers of Arlington, Virginia received the contract for the addition to Key Bridge. National Park Service designers worked with local officials and merchants to reconfigure the Rosslyn Plaza area. The plaza and an improved access road to the parkway were completed in 1941.³³⁹

The various agencies involved in the parkway's development began considering plans for the design of the parkway drive between Rosslyn and Great Falls long before the land acquisition progress was completed. Accounts of the design and development process were much more scanty than was the case with its closely scrutinized and heavily promoted predecessor. By the mid 1930s, however, the National Park Service and the Department of the Interior had codified the precise meaning of the term "parkway" and developed a series of design criteria for federal parkway projects. According to the Recreational Resources Committee of the National Resources Committee, a parkway was defined as "a strip of public land devoted to recreation which features a pleasure-vehicle road through its entire length, on which occupancy and commercial development are excluded, and over which abutting property has no right of light, air, or access."³⁴⁰ This 1936 definition and the accompanying design recommendations were clearly based on WCPC principles brought into the federal parkway program during the

³³⁷ A photograph of this section appeared in the Washington Evening Star 24 December 1938.

³³⁸ Memo, Hillory Tollson to Oscar Chapman, Acting Secretary of the Interior, 30 July 1935 (in National Park Service, Central Classified File 1933-1949, National Parkways: George Washington Memorial, Box 2774, RG 79, National Archives).

³³⁹ Mackintosh, "George Washington Memorial Parkway: Administrative History," 35-40.

³⁴⁰ Quoted in Dudley Bayliss, "Parkway Development Under the National Park Service," Parks and Recreation 20 (February 1937), 255.

development of Mount Vernon Memorial Highway. As circulated in internal NPS memorandums and articulated in a 1937 Parks and Recreation article by NPS landscape architect Dudley Bayliss, federal parkways were to incorporate virtually all of the features exemplified by Mount Vernon Memorial Highway, a photograph of which served as the primary accompanying illustration. According to Bayliss, the underlying principle of parkway development was that "the motor road itself is but a part of the entire project." The elongated configuration and primacy of roadway development distinguished National Parkways from National Parks, but the two had much in common. Recreational development, natural resource protection, wildlife habitat improvement, and scenic beauty were as integral to National Parkways as they were to National Parks. Associated parks, historic areas, and recreational developments should be developed in a compatible manner. Bayliss noted that George Washington Memorial Parkway was to be developed as a "metropolitan-type parkway embracing wide rights-of-way, with a wide roadway having some separated traffic sections." Bridle paths and other recreational facilities would be provided, and the project would include "thorough roadside improvement and landscaping."³⁴¹

While GWMP's roadway and landscape details were completed by BPR and PRA engineers and NPS landscape architects, both Frederick Law Olmsted, Jr. and Gilmore Clarke contributed to the parkway's general development, Olmsted in his role as a member of the NCP&PC and Clarke as the landscape architecture expert on the Commission of Fine Arts. Olmsted's involvement was largely limited to matters of initial boundary considerations and basic roadway location and alignment. According to future NPS director Conrad Wirth, Olmsted's primary concern was that "the parkway roads would take advantage of the vistas with the least possible damage to the rim of the Potomac River Gorge, and that it would provide necessary parking places with the least amount of damage to scenic values."³⁴² After the Commission of Fine Arts made an inspection tour of the parkway in April 1934 examining proposals outlined by an initial BPR survey, Clarke suggested that the roadway along the proposed four-lane road along the Virginia side be divided into two separate driveways: a northbound drive running along the base of the palisades and a southbound drive located near the top of the cliffs. Constructing a single four-lane roadway through the rugged terrain of the northern parkway would require extensive excavations that would seriously mar the scenery. Two widely spaced two-lane drives could be integrated into the existing terrain more sensitively, producing much less visual and environmental damage than a single four-lane roadway, which would require a broad terrace at least 60' wide, and probably much wider. The upper drive would entail the construction of several fairly substantial bridges to cross the deep ravines created by streams cutting into the palisades, but Clarke claimed these bridges would not be too expensive, since they would only have to accommodate a single two-lane

³⁴¹ Bayliss, "Parkway Development Under the National Park Service," 255-58.

³⁴² Conrad L. Wirth, Parks, Politics, and the People (Norman: University of Oklahoma Press, 1980), 31.

roadway. Clarke advised that the lower drive make use of the terrace formed by quarrying operations. Clarke envisioned these roadways recreational as park driveways rather than commuter thoroughfares, insisting there should be ample opportunities for pedestrians to get away from the motorway and enjoy the Potomac shoreline. The Commission of Fine Arts endorsed Clarke's recommendations and forwarded them to the NCP&PC, which in turn passed them on to the park service and the BPR.³⁴³

BPR engineers adopted Clarke's recommendations for the next section of roadway, the stretch between Key Bridge and Spout Run. Unfortunately, the project had already run out of construction funds. The park service included a modest acknowledgement of GWMP construction needs in the significant \$6 million national parkway development outlay it succeeded in getting into the Interior Department's fiscal 1942 appropriation bill, but America's entry into World War II brought all these projects to a halt. NCP&PC chairman Delano cast the completion of the roadway between Key Bridge and Lee Highway as a war-time emergency measure, pointing out that it would greatly facilitate access to federal offices in Washington and to the Pentagon, under construction just across Boundary Channel from the south end of Columbia Island. The Bureau of Public Road's successor agency, the Public Roads Administration, allocated money for the actual roadway construction as part of its broader plan to develop highway access to the Pentagon, but the project fell apart over land acquisition problems.³⁴⁴ The key land parcel along the Potomac and the valley of Spout Run belonged to the Smoot Sand and Gravel Company. Smoot insisted on an exorbitantly high figure of \$400,000, which was well above the land's appraised value. Delano managed to get Congress to appropriate \$200,000 and arranged a highly creative arrangement in which a Smoot stockholder would contribute the other \$200,000 to satisfy the Capper-Cramton requirements, but Smoot then backed out of the deal. The NCP&PC finally succeeded in acquiring the land along the Potomac and up Spout Run as far as Lorcum Lane in 1947. In January 1948 the Nello L. Teer Company of Durham, North Carolina, won the contract for grading and incidental construction for a bid of \$408,025. The PRA deemed the bids for the paving contract unacceptable. In May 1950 the newly redesignated BPR awarded a contract for a portion of the project to the W. H. Scott Company of Franklin, Virginia, leaving the rest of the work to be completed by the agency's own day labor forces. The GWMP extension and

³⁴³ Clarke's recommendations cited in letter Charles Moore to NCP&PC, 1 June 1934; letter, NCP&PC to MacDonald, 30 June 1934 (in National Park Service, Central Classified File 1933-1949, National Parkways: George Washington Memorial, Box 2774, RG 79, National Archives).

³⁴⁴ On July 1, 1939, the BPR was transferred from the Department of Agriculture to the Federal Works Agency and renamed the Public Roads Administration. On August 1, 1949 the agency was transferred to the Department of Commerce and the earlier name was restored.

the mile-long "Spout Run Parkway" access to Lorcum Lane were opened to the public on December 16, 1950 (Figures 172-174).³⁴⁵

The road was immediately popular with commuters (Figure 175). Parkway and highway designers were impressed with the way the designers dealt with the problem of constructing a modern, relatively high-speed roadway along the steep bluffs of the Potomac. The PRA built a divided roadway, with the northbound lanes following a slight bench along the Potomac shoreline, and the southbound lanes occupying a much higher position for most of the route before dropping gracefully down to river level just north of Key Bridge (Figure 176). Several highway design textbooks published during the 1950s and 1960s used views of the parkway north of Key Bridge to illustrate modern road-building techniques. Brewster Snow's 1959 volume The Highway and the Landscape identified GWMP and the Palisades Interstate Parkway as "importance advances in the art of fitting the highway to the landscape."³⁴⁶ The 1963 book Man-Made America: Chaos or Control? used a drawing based on the view from Key Bridge to exemplify the "superb handling of the variable median, achieved by a carefully studied interplay between two curvilinear roadways."³⁴⁷ Landscape architect Lawrence Halprin also used the classic view from Key Bridge to illustrate his 1966 book Freeways, praising the parkway as "an example of superb marrying of the road to the landscape."³⁴⁸ Ironically, the signature view was obstructed by the construction of an access ramp from Rosslyn Circle to the northbound parkway lanes in 1957, which transportation planners deemed essential due to the parkway's growing commuter traffic function.³⁴⁹

Not everyone was pleased with the Spout Run development. A growing number of park promoters and preservationists began to suggest that natural resource protection and highway development were incompatible in the rugged and constricted terrain bordering the Potomac between Washington and Great Falls. In April 1950 the National Parks Association sent a letter to NPS director Newton B. Drury expressing its opposition to future road development

³⁴⁵ Mackintosh, "George Washington Memorial Parkway: Administrative History," 36-42.

³⁴⁶ Brewster Snow, ed., The Highway and the Landscape (New Brunswick, N.J.: Rutgers University Press, 1959), illustration between pages 114-15.

³⁴⁷ Christopher Tunnard and Boris Pushkarev, Man-Made America: Chaos or Control? (New Haven: Yale University Press, 1963), 203.

³⁴⁸ Lawrence Halprin, Freeways (New York: Reinhold Publishing Corporation, 1966,) caption, p.37. A photograph of the steep, heavily wooded median in the vicinity of Spout Run Bridge appeared in Thomas Hickerson, Route Location and Design (New York: McGraw-Hill Book Company, 1964), 345.

³⁴⁹ The contract for the access road and overpass was awarded to Humphries and Harding, Inc., of Washington, D.C. in July 1957 for a bid of \$347,567 (Mackintosh, "George Washington Memorial Parkway: Administrative History," 42).

along the Potomac. Both the National Parks Association and the Wilderness Society protested that, no matter how artistically the engineers and landscape architects might manage to construct the roadways, they would still pose an unacceptable infringement on the scenic beauty and natural resources that the parkway was authorized to protect. Drury maintained that the parkway had never been conceived as an undeveloped wilderness area in the manner of the larger and more remote national parks. It was "a metropolitan or city park development" intended to combine recreation, scenic preservation, and transportation. Roadways were vital to its ability at performing these multiple functions. Drury contented that George Washington Memorial Parkway would still be more park-like than other federal parkways either planned or recently completed in the Washington area. Unlike the Suitland and Baltimore-Washington parkways, which were almost wholly devoted to traffic concerns, there would be significant undeveloped areas and "ample provision for nature lovers and the relatively small numbers of people who prefer secluded trails and waterways."³⁵⁰

Capper and Cramton had clearly emphasized resource protection issues in their drive for authorization, with road development a secondary concern, especially on the Virginia side between Washington and Mount Vernon. By the mid-1930s, when it became obvious that the primary attraction for local jurisdictions and federal funding sources was the potential transportation value of the parkway, the NPS began to stress road development issues. In his 1937 article, NPS landscape architect Dudley Bayliss maintained that "The recreational values of this type of parkway are not to be discounted, but the major considerations are traffic volume and movement." While the original GWMP backers promoted it as a resource protection measure, Bayliss proclaimed that its status as a metropolitan parkway meant that regional traffic concerns were "always justification for construction."³⁵¹

Before the park service and the BPR/PRA could begin extending parkway drives along the river, it was still necessary to acquire a significant amount of land. The congressionally mandated cost sharing between the federal government and state and local jurisdictions looked like a good idea on paper, but it proved to be a continuing source of problems in practice. Following the NCP&PC's initial success in getting Arlington County and the Commonwealth of Virginia to contribute to the Rosslyn extension, the reluctance of state and local jurisdictions to contribute seriously impaired the land acquisition process throughout the 1930s and 1940s. A few properties were acquired through gift or donation and the transfer of federal properties. The most notable of these was the 167.5-acre Joseph Leiter estate in Fairfax County, Virginia,

³⁵⁰ Letter, Drury to Devereaux Butcher, National Parks Association, 5 May 1950, quoted in Mackintosh, "George Washington Memorial Parkway: Administrative History," 43; Wilderness Society objections discussed in Mackintosh, p. 38-39.

³⁵¹ Dudley Bayliss, "Parkway Development Under the National Park Service," Parks and Recreation 20 (February 1937), 258.

which was deeded to the United States in August 1936 in exchange for \$1 and a favorable settlement of unpaid taxes. This property extended along the Potomac from Turkey Run down to Sycamore Island. A three-story 43 room house on the property burned to the ground in 1945. Aside from this, there was little progress on the Virginia side until 1948, when the NCP&PC received a \$200,000 appropriation for GWMP and the Virginia Assembly agreed to match the \$130,576 portion devoted to parkway development in Virginia. Arlington County also agreed to contribute. Between federal, state, and local contributions, \$600,000 was spent on parkway development in Arlington County between 1950 and 1952. While park concerns undoubtedly played a role in this modest expansion, the NC&PC used the promise of a federally constructed and maintained modern roadway between downtown Washington and the rapidly developing suburban regions of Arlington County as a lure to encourage local participation. Fairfax County officials exhibited little interest in participating in the project, however, content for the time being that Chain Bridge Road and Georgetown Pike provided adequate highway access. Despite repeated requests, Congress refused to appropriate additional funds for GWMP from 1949 until 1954. Until the mid-1950s, there was no further progress in Arlington County and, aside from the Leiter tract, the Fairfax County portion remained undeveloped.³⁵²

The primary impetus for extending the parkway north of Spout Run was the utilitarian imperative of facilitating access to the new Central Intelligence Agency headquarters in Langley, Virginia and providing an express route to the proposed Capital Beltway. By the mid 1950s, the CIA was looking for an expanded and secure office facility that would be convenient to downtown Washington. The agency was set on the large tract of land that the BPR had acquired in Langley, Virginia for use as a testing facility. The BPR and the NCPC saw this as an opportunity to secure funds for further parkway development. The BPR agreed to hand over most of its site to the CIA, though it maintained a portion for its own research station. The Military Construction Authorization Act of July 15, 1955 provided \$8.5 million for land acquisition and road development to the Langley site. These funds were made available to the NCPC for fiscal years 1957 and 1958. Most of the money, \$8 million, was allocated to road construction, with the remaining \$500,000 assigned to supplement the earlier Congressional appropriations for land acquisition. The NCPC maintained that additional money was needed to purchase land between the BPR/CIA facilities and the projected course of the Capital Beltway. Congress appropriated an additional \$438,000 in Capper-Cramton funds to acquire this land and several additional parcels in fiscal year 1957. The NCPC also transferred 6.6 acres of GWMP land to the CIA in exchange for 11.4 acres of the former BPR site. These transactions took place between September 1956 and April 1957. It soon became apparent that the road construction process would cost more than the initially authorized \$8 million. The NPS and NCPC supplemented the CIA appropriation with funds originally slated

³⁵² Mackintosh, "George Washington Memorial Parkway: Administrative History," 38-39, 43-44, 57-58.

for parkway road construction on the Maryland side of the river between Carderock and Great Falls. The Commonwealth of Virginia and Fairfax County contributed over \$800,000.³⁵³ Construction on the roadway between Spout Run and Chain Bridge began in October 1956. The contract for grading, drainage, and bridge abutments was awarded to Taylor and Keebler, Inc. of Clifton, Maryland for \$1,161,195. Grading and preliminary construction continued through 1957 and 1958. The paving contract for the full segment between Spout Run and the CIA interchange was let in two parts to Newton Asphalt Company of Alexandria and Contee Sand and Gravel of Laurel, Maryland for a combined total of \$1,580,462. The dual four-lane road parkway drives were separated by a continuous median of varying width. The north- and south-bound lanes pursued independent alignments throughout much of their length incorporating modest variations in elevation to accommodate existing terrain features, but Clarke's proposal to place the northbound lanes at a lower level near the Potomac was abandoned for both engineering and environmental considerations. The increasing complaints about the parkway's effects on the Potomac Palisades would have been even greater if the road had been routed along the Potomac shoreline, and the expense and technical difficulty of constructing two widely separated roadways with integrated circulation features made the prospect unattractive to BPR engineers. By bringing the independent roadways together to cross the streams and ravines on a single wide bridge or two closely spaced bridges, BPR engineers saved considerable on the cost of excavation, construction, and engineering. President Eisenhower officially opened the segment of GWMP between Spout Run and the CIA interchange on November 3, 1959, in a widely publicized ribbon-cutting ceremony attended by NPS director Wirth, National Capital Parks superintendent Harry T. Thompson, Assistant Secretary of the Interior Roger Ernst, and a bevy of politicians and transportation officials (Figure 177).³⁵⁴

No one considered the CIA headquarters to be a suitable long-term terminus for the Virginia section of GWMP (Figure 178). NPS officials wanted its course continued north toward Great Falls, while CIA and regional transportation officials were eager for a direction connection to the Capital Beltway. The Federal Aviation Administration also backed the parkway's extension to provide better access to the international airport being constructed near Chantilly, Virginia, which would eventually be named after John Foster Dulles. The NPS opposed a

³⁵³ Krakow, Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suitland Parkway, Baltimore-Washington Parkway, 69-70; Mackintosh, "George Washington Memorial Parkway: Administrative History," 58-63.

³⁵⁴ Krakow, Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suitland Parkway, Baltimore-Washington Parkway, 70-71; Eleanor Lee Templeman, Arlington Heritage: Vignettes of A Virginia County (Arlington, Virginia: Author, 1959), 142-43; Mackintosh, "George Washington Memorial Parkway: Administrative History," 62-66; "President Eisenhower snips the ribbon opening a new section of the George Washington Memorial Parkway Today" Washington Evening Star 3 November 1959; Wirth, Parks, Politics, and People, 282.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 160)

direct connection between GWMP and the airport, arguing that it would overburden the roadway with non-recreational traffic. Deciding how and where to place the roadway in this final section caused some contention between the NPS and the BPR. The park service wanted the roadway to maintain a significant distance from the actual palisades escarpment in order to preserve natural resources and reserve space for the development of picnic areas and trails. Moving the roadway back away from the palisades would also significantly reduce construction costs by eliminating several bridges. The BPR had no specific objection to this proposal, but the NPS's preferred alignment would cut into the BPR property. In May 1959 the BPR agreed to transfer a 72.7-acre tract to the NPS provided the NPS approve the construction of an interchange in the Turkey Run area to facilitate access to the BPR research facility. Congress appropriated an additional \$62,000 for further land acquisition in this area. This would be the last expenditure of Capper-Cramton funds on the Virginia portion of GWMP. Newton Asphalt received the contract to complete the pavement from the CIA interchange to the Beltway at a cost of \$977,843. The development of the Turkey Run Recreation Area, lying between the parkway road and the Potomac, was also begun under this contract, which called for a short spur road and four parking and picnicking areas. This work was begun in 1961 and the parkway road from the CIA interchange to the Beltway was opened in December 1962. This would be the final segment of parkway road on the Virginia side of GWMP.³⁵⁵

³⁵⁵ Krakow, Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suitland Parkway, Baltimore-Washington Parkway, 70-71; Mackintosh, "George Washington Memorial Parkway: Administrative History," 62-66.

GEORGE WASHINGTON MEMORIAL PARKWAY: THE END OF THE ROAD

Even before the parkway was extended to CIA headquarters and the Beltway, there were signs that it was unlikely to go much further on either side of the river. In 1957 the NCPC asked Congress to appropriate \$3,475,000 for land acquisition the following year. The NCPC claimed that this major expenditure would enable the NPS to complete the projected road construction with funds set aside for the Mission 66 program. The largest amount, \$1.9 million, was slated for land acquisition in the as-yet undeveloped Prince George's County segment of the parkway between Washington and Fort Washington. The NPS estimated that \$1.5 million would be enough for the remaining land from the Beltway to Great Falls, while the final \$75,000 would cover Montgomery County. The House approved the measure with surprisingly little objection, but the Senate subcommittee hearings on the appropriation bill revealed considerable skepticism about the wisdom of carrying the parkway past the Beltway to Great Falls. NCPC director John Nolen, Jr., argued that it was essential to move rapidly to acquire the desired land before the Fairfax County real estate boom spurred by the CIA facility, the Beltway, and the parkway itself caused land prices to rise. The opposition to the extension of GWMP revealed both specific local concerns and the growing sentiment that parkways were no longer able to reconcile the conflicting demands of transportation, recreation, and resource protection.³⁵⁶

After a Senate Appropriations Committee meeting in which local citizens accused the park service of having "defiled and desecrated the palisades" in constructing the Spout Run and Arlington County portion of GWMP, Congress asked the NPS and NCPC to re-examine the desirability of continuing with the original plan of extending the parkway on both sides of the Potomac from Mount Vernon to Great Falls.³⁵⁷ While some landowners may have resisted the parkway as an infringement on their potential development profits, the proposal to build a four-lane high-speed roadway along the edge of last undeveloped portion of the Palisades generated outspoken objections from conservation organizations, local civic groups, and private citizens. These groups were highly critical of the NPS's handling of the parkway extension from Rosslyn to the CIA. The July 1957 Senate hearings on the parkway's future revealed that many people felt that George Washington Memorial Parkway had destroyed a significant portion of the scenic resources of the Potomac Palisades that the Capper-Cramton Act had meant to preserve. Scott Seegers, a resident of nearby McLean, Virginia, accused the parkway developers of conducting a "strip-mining operation" along the Palisades and claimed that the "callous destruction of this inspiring stretch of wilderness" demonstrated that the NPS and

³⁵⁶ Mackintosh, "George Washington Memorial Parkway: Administrative History," 89-91.

³⁵⁷ Scott Seegers, Virginia Potomac Valley Association, in U.S. Congress, Senate Committee on Appropriations, Interior Department and Related Agencies Appropriations (Washington: Government Printing Office, 1957), quoted in Mackintosh, "George Washington Memorial Parkway: Administrative History," 90.

NCPC could not be trusted. Citing various other incursions and threatened incursions into Washington-area parks, Seeger and others insisted that the NPS, NCPC, and other federal agencies were the worst enemies of local scenic resources. Park Payne, another local citizen and landowner, contended that private owners had proven to be better stewards than the NPS and NCPC, arguing that they would preserve the views along the Potomac in order to protect their investments.³⁵⁸

GWMP in Fairfax County, Va.

A variety of conservation and outdoor organizations opposed extending the parkway beyond the Capital Beltway. The District of Columbia chapter of the Audubon Society strongly opposed the development plans, advising, "The terrible destruction which has accompanied the building of the Memorial Parkway on the Virginia side below Chain Bridge can never be repaired and is a convincing demonstration that the building of a parkway is not consistent with the preservation of the scenery of the gorge." The Arlington-Fairfax Chapter of the Izaak Walton League protested that the proposed four-lane roadway would "have the character of an express highway rather than a park road and thus would destroy by its impact one of the most inspiring stretches of unconfined wild nature within reach of the metropolitan area of the National Capital." The Wilderness Society declared that the proposed development in Fairfax County "would forevermore destroy the quality of remoteness which can still be found here, almost within the metropolitan arms of the Capital City of the Nation." The Audubon Society maintained that there was "no possible justification for the extension of the Memorial Parkway on either the Virginia side or the Maryland side," and warned that the proposed development would "completely destroy the superb bluffs and cliffs that line the gorge, completely alter the character of the river and detract from the value of the C & O Canal Park on the Maryland side." The National Wildlife Federation, the Citizens Committee on National Resources, the Great Falls Garden Club, and several other local outing and nature organizations also urged the parkway developers to reconsider their plans.³⁵⁹

Local government officials and park authorities also opposed parkway extension and the continuation of the parkway drives past the Beltway to Great Falls. In 1952 the Fairfax County Park Authority had acquired a 16-acre park at Great Falls that had formerly served as the terminus of the Great Falls branch of the Washington and Old Dominion Railway. The county was eager to retain possession, in part so that it could charge small parking fees to recover the purchase price. This tract was surrounded by a much larger landholding that

³⁵⁸ U. S. Congress, Senate Committee on Interior and Insular Affairs, George Washington Memorial Parkway a Review of the Capper-Cramton Act Authorization (85th Cong., 1st Sess., 11 January 1957), 34-35, 42-44, 48.

³⁵⁹ George Washington Memorial Parkway a Review of the Capper-Cramton Act Authorization (85th Cong., 1st Sess., 11 January 1957), Izaak Walton League, 47, Wilderness Society 46-47, Audubon Society 49.

belonged to the Potomac Electric Power company, which had left it in largely unchanged condition after the hydroelectric development plans fell through. The ruins of the Patowmack Canal were largely located within the Pepco tract. Both the county and the federal government sought on the property, which had been included within the original taking lines of GWMP. The county complained that the parkway development plans calling for dual highways extending right up to the falls would bisect the tract and threaten its historic and natural resources. The Fairfax County Park Authority called on the NPS to thoroughly restudy its 1939 proposals. The Fairfax County Commission endorsed the park authority's position, emphasizing the desire to maintain the natural qualities of the area and avoid over-development.³⁶⁰

The NPS and NCPC had already begun to reconsider the development plans worked out with the BPR in 1939. After the Senate Appropriations Committee rejected its requests for funding, the NCPC hired Charles Eliot II to review the GWMP project. Eliot paid particular attention to the question of road development in the final Fairfax County section. Eliot emphasized the project had always expected roadways to be built on both sides of the river all the way to Great Falls. The reason that the Capper-Cramton had not mentioned road development on the Virginia side while specifically stipulating highway construction in Maryland was that the Maryland road was expected to function as part of the local transportation system, and was thus eligible for general Federal Aid highway funds, while the Virginia roadway was envisioned as primarily recreational in nature. The difficulty of constructing roadways along the palisades was another reason the original legislation had left the matter open for future consideration. As the parkway development in Arlington County demonstrated, highway engineers had learned how to handle the technical obstacles of building a road along the edge of the Palisades, but even Eliot had begun to doubt whether such an approach was necessarily desirable. He insisted that it was still vitally important to extend the parkway reservation all the way along the Potomac to Great Falls, but conceded it was inadvisable to construct any further roadways directly along the bluffs above the river. Eliot advised that traffic could be accommodated by improving Route 193 and encouraging motorists to use the proposed Capital Beltway to reach other radial routes constructed in less sensitive areas. Where the Beltway passed through GWMP lands, he recommended that it be given a "parklike treatment." Eliot's suggestions for the improvement of Route 193 called for the construction of a parallel two-lane roadway, which would be separated from the original roadway by a median so that the two could function in tandem, either as separate one-way roads, or as a utilitarian highway and a separate park road. Close to Great Falls, a two-lane park-like road would turn off to provide access to the Virginia shore. Low-speed, two-lane roads would provide access to overlooks and recreational features such as hiking and equestrian trails. Eliot acknowledged that a true

³⁶⁰ George Washington Memorial Parkway a Review of the Capper-Cramton Act Authorization (85th Cong., 1st Sess., 11 January 1957), 15-17, 20, 24-26, 31-34.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 164)

parkway-like drive paralleling the river might be warranted at some point in the future, but insisted it be located a considerable distance from the edge of the Palisades. He recommended that the parkway be expanded to allow designers to construct a roadway further inland.³⁶¹

The NPS wanted to complete the project as soon as possible and was willing to scale back development on both sides of the river to modest, winding, two-lane park roads, located far enough from the actual cliffs and shoreline to avoid controversy. NCPC director John Nolen, Jr., defended the parkway construction in Arlington County, maintaining that existing development had limited the NPS's options in Arlington County. He insisted that the parkway builders were not contemplating a similar approach north of the Beltway. Nolen emphasized that the NCPC and NPS were willing to amend the 1939 plan. The NCPC concurred with Eliot's recommendation that Route 193 should serve as the primary traffic artery beyond the Beltway, but insisted that it might be necessary to eventually build a "winding park road" through the final section.³⁶²

Opponents remained highly skeptical of the parkway builders' ultimate intentions. Given that the NCPC had recently tried to force expressways through other Washington-area parks that had much firmer legal guarantees against highway development, local officials and conservation organizations were unwilling to settle for vague assurances that the parkway planners were committed to restudying their proposals and temporarily minimizing road construction efforts. Until the NPS and NCPC officially revised their plans, they claimed, there was no way to predict what they would do with the requested appropriations. Most parkway opponents seemed to assume that the construction of a two-lane road, at the very least, was imminent, and the consensus seemed to be that a two-lane parkway would not be significantly less damaging than a four-lane parkway. Several critics also accused the NCPC of significantly underestimating the cost of the lands in question. The NPS and NCPC may have honestly intended to curtail roadway development in the final reaches of GWMP, but Fairfax County officials and other skeptics refused to go along with the agencies' plans without guarantees that the last stretch of the parkway would remain unspoiled by major roadway construction and that the land acquisition estimates more accurately approximated the true cost of the project. The Fairfax County commissioners declined to endorse the NCPC's

³⁶¹ George Washington Memorial Parkway a Review of the Capper-Cramton Act Authorization (85th Cong., 1st Sess., 11 January 1957), 18-20.

³⁶² George Washington Memorial Parkway a Review of the Capper-Cramton Act Authorization (85th Cong., 1st Sess., 11 January 1957), 3-6, 14-15, 17, 27, 29-30.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 165)

appropriation requests or commit the county to cooperating in the project according to the terms of the Capper-Cramton Act.³⁶³

The NCPC proceeded to officially adopted Eliot's report as the new planning document for the remainder of the parkway, but the Fairfax County Board of Supervisors was still leery of the report's vague language and threat to its own park development goals. In June 1958 it voted to oppose further federal land acquisition upstream of the Capital Beltway. In view of the continued opposition, the Senate Interior and Insular Affairs Committee instructed the NCPC to put the projected extension on hold until more local support materialized. The following year the NCPC approached Congress with a request for \$500,000 to purchase the Pepco tract at Great Falls. The NCPC also included the Fairfax County Park Authority's holdings in its proposed acquisition. The NPS vowed that it had completely abandoned the thought of building a roadway through to the falls. Neither Pepco nor the county approved the federal government's offers, but the NPS kept negotiating. In March 1960 Pepco agreed to lease its land to the NPS for 50 years in exchange for rights to erect a transmission line through a section of the Baltimore-Washington Parkway in Prince George's County. A more permanent arrangement was forestalled as the values of the two properties were assessed and Congress delayed action on the bill authorizing the transfer. The legislation authorizing the transfer was finally approved and signed by President Johnson in May 1965. The Fairfax County Park Authority agreed to cede its 16-acre parcel to the federal government in return for the right to continue collecting parking fees until its costs in acquiring the tract were paid back.³⁶⁴

The NPPC and NPS still wanted to extend the parkway from the Beltway to the Pepco tract. According to the NCPC's 1966 estimates, this required the purchase of an additional 790 acres at a cost of \$3.2 million. Congress was not receptive toward this request, which was combined with a plea for \$2.9 million for the Prince George's segment. By 1966 the combined federal, state, and local expenditure on GWMP was \$33,980,271, including \$8 million from the CIA. The federal government's share had well exceeded the \$7.5 million authorized under the Capper-Cramton Act and Congress was not inclined to continue funding the parkway, which new NPS director George Hartzog acknowledged would need at least another \$19 million. Congressional opposition to any sort of major funding renewal for GWMP fell back on the long-standing argument that D.C. citizens should pay for the own parks, just like the residents of other cities. Another point of contention was that the newer sections of GWMP, like the Suitland and Baltimore-Washington parkways, had more in common with modern express highways than national parkways such as Blue Ridge Parkway and the Natchez Trace, and should thus be funded by ordinary highway development

³⁶³ George Washington Memorial Parkway a Review of the Capper-Cramton Act Authorization (85th Cong., 1st Sess., 11 January 1957), 26, 31, 38-43, 51-54.

³⁶⁴ Mackintosh, "George Washington Memorial Parkway: Administrative History," 93, 95-96, 102-104.

mechanisms rather than through Interior Department appropriations. GWMP proponents unsuccessfully tried to cast the parkway as the crucial link in a proposed "George Washington Country Parkway" that would extend from Yorktown to the Blue Ridge. The NPS managed to acquire a few small properties between Great Falls Park and the Beltway, but most of this land remained in private ownership. A key exception was the Dranesville District Park, a 336-acre parcel that Fairfax County officials managed to acquire from the heirs of Edward Burling in 1970. Recognizing that there was no longer any chance of completing the parkway along the Virginia shore, in 1987 the NPS returned one 14.7 acre tract to private ownership in exchange for development restrictions on 20 acres of prime riverfront property. As NPS historian Barry Mackintosh has pointed out, however, this was a clear indication that the development of GWMP had reached its high water mark in the 1960s. The Fairfax County land exchange may have been the first indication that the tide was turning, since the NPS proposed divesting its responsibility for the roadways in northern section of GWMP as part of a March 1995 effort to placate federal budget-cutters.³⁶⁵

GWMP in Maryland

Progress was just as slow and ultimately incomplete on the Maryland side of the river. A few private tracts within the proposed GWMP reservation were donated during the 1930s, but Maryland officials focused on developing stream-valley parkways leading from suburban Montgomery County into Washington. Sligo Creek Parkway and the Rock Creek Park extension were also eligible for Capper-Cramton funds, and were more attractive as commuting routes for the region's burgeoning suburban population. The NCP&PC resented this focus on local priorities at the expense of GWMP. The parkway development on the Maryland side received a boost in September 1938 when the B&O Railroad, which had acquired the C & O Canal property, sold the canal to the federal government to help defray the company's extensive debts to the Reconstruction Finance Corporation. The Capper-Cramton Act had called for the acquisition of the C & O Canal only as far as Point of Rocks, but the B&O Railroad ceded the entire length of the canal from Washington to Maryland for \$2 million. The \$2 million did not come from Capper-Cramton funds but from a Public Works Administration (PWA) appropriation authorized in the National Industrial Recovery Act of 1933. The PWA allotment also included \$500,000 for parkway construction and rehabilitation of the historic canal for recreational and historical purposes. From 1938 to 1942, CCC rehabilitation crews worked out of two camps at Carderock, Maryland. The canal acquisition and related activity finally prompted the Maryland General Assembly to contribute \$350,000 toward parkway land acquisition in Montgomery County between 1939 and 1941. Congress matched this amount under the terms of the Capper-Cramton Act. Between these funds and the

³⁶⁵ Mackintosh, "George Washington Memorial Parkway: Administrative History," 104, 106-108, 114-16; Stephen Fehr, "Clinton Wants Maryland, Virginia to Take U.S. Parkways," Washington Post, 27 March 1995.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 167)

C & O Canal acquisition, the NCP&PC was able to acquire most of the land it sought for parkway development in Montgomery County. The parkway also received some property from the U.S. Army Corps of Engineers. In December 1947, the Corps ceded most of its Washington Aqueduct property in the Great Falls area to the NPS. In 1952, it transferred extraneous land acquired during the development of a new pumping station at Little Falls dam. Another windfall came in the form of an 18-acre donation by the Navy, which ceded a portion of its David Taylor research facility property in 1937. The Navy wanted the parkway road construction to improve access for its employees.³⁶⁶

The Capper-Cramton Act's requirement that the parkway drive should be developed as a state highway with Maryland paying one-half the cost wound up causing serious delays because the state of Maryland was not eager to contribute its mandated funding contribution for a primarily recreational roadway which, at that time, did not service a major residential or commercial region. NCP&PC and NPS officials asked Congress to amend the Capper-Cramton Act to release Maryland from the fifty-fifty cost-sharing agreement, pointing out that it was unfair for the federal government to bear the entire cost of parkway road development on the Virginia side but not in Maryland. Congress finally agreed to rectify this disparity in 1946, clearing the way for federally funded road development in the Maryland portion of GWMP.³⁶⁷

The NCP&PC and the NPS encountered the greatest problems in their efforts to develop the southeast leg of the parkway between Washington, D.C. and Fort Washington (Figure 179). The proposed parkway drive would link with the district's Shepherd Parkway at Blue Plains, the land for which had mostly been acquired by 1931. As outlined in the Capper-Cramton Act, the War Department made Fort Foote available for parkway development in 1931, when it was deemed unnecessary for military purposes. The War Department transferred Fort Washington to the NPS in July 1940, but reoccupied the facility as a training facility during World War II. The Veterans Administration used the property as a hospital and convalescent home until January 1947, when it was returned to the NPS. Prince George's County, the jurisdiction for most of the southeastern leg, was the most thinly settled region within the proposed parkway, and neither the county nor the state of Maryland expressed much interest in parkway development. The NCP&PC solicited private donations, but key landowners proved hostile to the idea of parkway development on their property. Aside from the transfer of Fort Washington and Fort Foote, virtually no progress was made on the southeast leg of the parkway until 1956, when Prince George's County officials decided to support the project and persuaded the state legislature to support a \$1 million bond issue the following year. The

³⁶⁶ Mackintosh, "George Washington Memorial Parkway: Administrative History," 45-47, 50-52; Krakow, Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suitland Parkway, Baltimore-Washington Parkway, 66-67.

³⁶⁷ Mackintosh, "George Washington Memorial Parkway: Administrative History," 48-50.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 168)

NCPC asked Congress for \$1.9 million in Capper-Cramton funds to match the state and local contributions. Charles Eliot II, in his 1957 report on GWMP, strongly advocated development of the Prince George's leg as an essential component of the regional park system. Eliot suggested several realignments mandated by recent subdivisions and warned that rapid action was necessary to acquire the proposed parkway lands before they fell prey to private developers. The Maryland-National Capital Planning Commission (M-NCPC) also endorsed the Prince George's County parkway. Maryland and Prince George's county officials finally began to get behind the project in the mid-1950s, passing funding measures and backing the proposal in appropriation committee hearings but by this time, congressional interest in the southeast leg had waned and funding for the Prince George's section was deleted from the National Capital Planning Commission's (the NCPC was the successor agency to the NCP&PC) budget for fiscal 1958. A number of influential local citizens continued to oppose any parkway development that would infringe on their land. Estimates for land acquisition and road development, meanwhile, had crept up to \$10 million or more. The House's Interior Department appropriation subcommittee ruled that it was too much to spend on the parkway. The committee's 1958 report pointed out that existing roads were capable of accommodating expected traffic demands for the foreseeable future. To dissuade future efforts to revive the project, the committee announced it would not consider any further requests for appropriations for the Prince George's portion of the parkway. Nevertheless, the NCPC again requested money for the Prince George's leg in 1959, stressing that the parkway's primary purpose was to preserve the Potomac riverfront, not to serve as a transportation corridor. The house committee again rejected the NCPC's requests, asserting that the federal government had already purchased enough parks for the District of Columbia and declaring that additional park developments should be paid for by the jurisdictions that would benefit from them. The committee reiterated its stand that existing highways were adequate for the region's traffic demands and proclaimed that Fort Washington was not a nationally significant parkway destination. The NCPC and NPS finally made some headway in Prince George's County in 1959, convincing the Department of Health, Education, and Welfare to transfer the farm that had long been operated by St. Elizabeth's Hospital to the Department of the Interior. This addition was one of the recommendations of Eliot's 1957 report. Located on the south side of Oxon Creek between the District of Columbia Line and the Capital Beltway, the facility was converted into a "Living History" museum of traditional farming techniques and opened in 1967 under the designation "Oxon Hill Farm." In 1960 Congress appropriated \$250,000 toward the purchase of 240 acres located between the Prince George's County end of the Woodrow Wilson Bridge and the Oxon Hill Farm property, another of Eliot's recommendation. The county matched this amount under the terms of the Capper-Cramton

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 169)

Act. These acquisitions protected a significant stretch of the Potomac waterfront and Oxon Creek estuary from incompatible development.³⁶⁸

The Kennedy and Johnson administrations proved somewhat more supportive of the parkway project. Secretary of the Interior Stewart L. Udall and presidents Kennedy and Johnson advocated the project's completion. Even this high-level backing was not sufficient to complete the original concept of a parkway drive stretching along the Potomac shoreline from the District Line to Fort Washington, however. In 1961 Congress approved funds for the acquisition of several additional tracts along the Potomac shoreline between Fort Foote and Fort Washington totalling 416 acres, but the legislation specifically stated the federal money could not be used for the planning or construction of a parkway drive. It also forbade the use of eminent domain to acquire improved property along the potential parkway route. This provision was designed to placate landowners who opposed the parkway. The NCPC was able to acquire the historic estate of Harmony Hall along with some additional shoreline property, but these limitations made it virtually impossible to complete the roadway along the Potomac riverfront opposite Mount Vernon Memorial Highway. With Udall's backing the NPS revived plans for the Prince George's County parkway again in 1965 and President Johnson endorsed the project in his annual message to Congress. The NPS devised a compromise parkway alignment designed to minimize conflict with uncooperative landowners. The primary obstacle was the committed opposition of a group of landowners in an expensive subdivision called Broadwater Estates located on the south shore of Broad Creek. The NCPC asked for \$2.9 million for fiscal year 1967 to acquire an additional 660 acres in Prince Georges' County, along with \$3.2 million for further land acquisition in Fairfax County. The new request would have put the total well over the \$7.5 million originally authorized in the Capper-Cramton Act. Congress again rejected both the land acquisition bid, strongly suggesting that local jurisdictions should pay for their own parks and roads, just like citizens in other parts of the country. The House committee reiterated its support for NPS parkways in scenic areas, but questioned the propriety of expending Department of the Interior appropriations on the development of metropolitan parkways that were in many respects indistinguishable from expressways constructed in standard fashion with federal highway funds. Pointing to the Baltimore-Washington and Suitland parkways as highly questionable examples of this phenomenon, the committee predicted that a southeast leg of GWMP linking downtown Washington with the Capital Beltway would serve primarily as a commuter route, and was thus

³⁶⁸ NCP&PC, Annual Report, 1931, 86; U.S. Senate Committee on Interior and Insular Affairs, George Washington Memorial Parkway a Review of the Capper-Cramton Act Authorization, 85th Cong., 1st Sess., 11 January 1957, 4; Eliot, Lankford, and Wells quoted, 9-14; Mackintosh, "George Washington Memorial Parkway: Administrative History," 52-55, 89-99; Krakow, Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suitland Parkway, Baltimore-Washington Parkway, 72-73.

not deserving of federal parkway appropriations. Once again, both the House and the Senate rejected the NCPC request.³⁶⁹

Over the next few years, the NPS, NCPC, and local supporters tried a variety of maneuvers to secure federal funding to complete the Prince George's County segment. To avoid further opposition from the Interior Department subcommittee, Maryland Rep. Hervey G. Machen shifted the effort to the House Public Works Committee, which was chaired by a fellow Marylander, Rep. George H. Fallon. This committee conducted hearings on the bill in March 1968 and attempted to secure funding for it through the federal highway appropriations for fiscal years 1970 and 1971. The new legislation called for the use of scenic easements to protect the largely undeveloped quality of the Potomac shoreline without resorting to expensive fee simple acquisition or contentious condemnation proceedings. The most transparent bit of chicanery was to recast the Prince George's portion of George Washington Memorial Parkway as "Fort Washington Parkway." This term had been used occasionally since the project's inception, and was ostensibly a means of avoiding confusion with the Virginia portion of the parkway, but the underlying intention of the renewed emphasis on this designation was to subvert the Congressional prohibition on expending federal funds for parkway drive development in the Prince George's County section of GWMP. This ruse fooled no one and the measure was once again turned down. Finally, the NPS and the NCPC conceded defeat. On June 19, 1969, NPS director George B. Hartzog, Jr., officially declared that there would be no further efforts to complete the southeast leg of the parkway.³⁷⁰

The development of GWMP in Montgomery County was significantly more successful, though just as protracted. Finding a way to construct a modern motor road between the C & O Canal and the generally steep terrain on the Maryland side of the Potomac proved to be a formidable challenge for GWMP designers. During the early and mid 1930s the NCP&PC favored Eliot's plan for a major traffic road along the top of the bluffs with the potential for park drives closer to the canal on upstream portions where topographic conditions permitted. Between Rock Creek and Key Bridge an elevated highway would carry parkway-bound traffic. The NCP&PC favored the use of Conduit Road (now MacArthur Boulevard) as the major traffic artery, suggesting that it be turned into a limited-access parkway type development. The commission

³⁶⁹ Mackintosh, "George Washington Memorial Parkway: Administrative History," 99-109; President Johnson quoted, p. 104.

³⁷⁰ Mackintosh, "George Washington Memorial Parkway: Administrative History," 109-113. Though technically part of the GWMP reservation, the disconnected land parcels accumulated over the years are administered by National Capital Parks-East rather than by the superintendent of GWMP. The National Capital Park and Planning Commission referred to the Prince George's leg as "Fort Washington Parkway" in its annual reports during the early 1930s and again in its 1950 Comprehensive Plan, always clearly casting it as a component of the larger GWMP project (Regional Aspects of the Comprehensive Plan [Washington, D.C.: National Capital Park and Planning Commission, 1950], 29).

even proposed paving over a portion of the canal for an express highway in the constricted area west of Georgetown. Since Conduit Road passed over the historic Cabin John Aqueduct Bridge, the NCP&PC strongly recommended that parkway traffic be diverted to a modern bridge located 450' downstream from the original structure. In 1939 the BPR supplanted this scheme with a proposal to build a modern four-lane parkway drive along the canal, with north and south-bound driveways located at approximately the same level but separated by a modest median. Believing that this approach would be detrimental to the scenic and historic value of the canal and its surroundings, NPS landscape architects proposed several alternatives. One possibility was to separate the north and south bound lanes more dramatically, as Clarke had proposed to do on the Virginia side. The southbound motorway could follow the canal, while the north bound lanes could be located further from the river along the Glen Echo trolley right-of-way. NPS landscape architect Henry E. Van Gelder opposed the idea of building any major roadway at canal level along the Maryland side of the river south of Cabin John, urging reconsideration of the NCP&PC's plan to improve Conduit Road sufficiently to handle increased traffic demands. All of these proposals were shelved during World War II. Actual road development within the Montgomery County portion of GWMP did not get underway until the late 1950s, when new construction programs within the NPS combined with external pressures to initiate the belated and ultimately much-compromised development of the Washington-to-Great Falls leg of the parkway.³⁷¹

Following the completion of the Spout Run parkway segment, progress on both the Virginia and Maryland portions of GWMP had stalled due to unwillingness on the part of federal, state, and local governments to fund the project. The internal NPS stimulus for reviving development efforts in the late 1950s was provided by the Mission 66 program. Mission 66 was a nationwide effort to upgrade NPS facilities in time for the fiftieth anniversary of the NPS in 1966. World War II and the tightened federal budgets of the postwar years had resulted in significant cutbacks in maintenance activities and the curtailment of contemplated construction projects throughout the national park system. By the mid 1950s, the rapidly escalating use of parks put pressure on the NPS to make amends for the extended neglect of park infrastructure needs by launching new development and revitalization programs throughout the system. NPS director Wirth characterized the completion of GWMP as a vital component of the Mission 66 agenda. The external stimulus for renewed support for GWMP came from regional transportation development pressures. On the Maryland side, this was most strongly felt in the rapid suburbanization of Montgomery County, which created demand for an express commuter route between Washington, D.C. and its northwest suburbs. Maryland planners initially called for a direct route from the newly constructed U.S 240 (now Interstate 270) to downtown

³⁷¹ NCP&PC, *Annual Report, 1931*, 83-95 (especially "Typical Cross Sections of Potomac River Parkway," Chart 10, p. 87); NCP&PC, *Annual Report, 1932*, 48-54; Mackintosh, "George Washington Memorial Parkway: Administrative History," 47-48; Krakow, *Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suiland Parkway, Baltimore-Washington Parkway*, 76.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 172)

Washington. Their proposal to extend U.S. 240 along the west edge of Rock Creek Park to link with an expanded Rock Creek and Potomac Parkway met with strong resistance. Weighing the relative importance of both areas to the region's park system, the NPS and NCPC decided that it would be better to redirect traffic via the Capital Beltway and the Maryland leg of GWMP than funnel it through Rock Creek Park and the National Zoo. With this purpose in mind, Congress appropriated \$183,00 for fiscal year 1956 for GWMP land acquisition in Montgomery County, along with \$655,000 for grading operations to begin construction of the parkway road between Cabin John and the District Line.³⁷²

During the 1950s and 1960s, D.C. preservationists fought battles to prevent express highway development in Rock Creek Park, Glover-Archbold Park, Whitehaven Parkway, Dumbarton Oaks Park, and the incomplete sections of GWMP. Generally, the NPS sided with the park preservation forces as far as possible. The NPS backed away from a long-contemplated proposal to build a park drive along the C & O Canal upstream from GWMP after Supreme Court Justice William O. Douglas conducted a protest walk along the canal in 1954, but Washington park and planning officials believed that express parkway development along the Potomac River between the Beltway and Georgetown was the least destructive means of accommodating regional traffic demands. Several local citizens' groups and conservation organizations opposed the development of major roadways alongside the canal in the Montgomery County section of GWMP, urging the NCPC to reconsider alternatives such as upgrading MacArthur Boulevard to carry additional traffic or using the Glen Echo trolley corridor. The Wilderness Society opposed the project, as did the District of Columbia Chapter of the Audubon Society, the Potomac Appalachian Trail Club, and the Progressive Citizens Association of Georgetown. The NPS promised to protect the historic canal and surrounding scenery, and even considered downscaling the development to a single two-lane roadway, with the thought the trolley line might eventually be converted to a northbound motorway. The BPR objected to the NPS's proposed compromise, insisting that the predicted traffic volumes mandated a four-lane roadway and claiming that it would be impossible to use the trolley right-of-way to develop a parallel motorway without condemning an excessive amount of additional land. The NPS tried to convince BPR officials that the double roadway system was essential for preserving park values, and called attention to the fact that land had been acquired

³⁷² Mackintosh, "George Washington Memorial Parkway: Administrative History," 60-61, 67; on Mission 66, see Conrad Wirth, Parks, Politics, and the People (Norman: University of Oklahoma, 1980), 234-38; for more on the proposal to build an expressway through Rock Creek Park, see Timothy Davis, "Rock Creek and Potomac Parkway, HAER Report No. DC-697," [Historic American Engineering Record, National Park Service, U.S. Department of the Interior, Washington, D.C., 1992], 114-33).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 173)

primarily for park purposes not as an expressway route, but the NCPC sided with the BPR.³⁷³

Over continued protests by conservation groups, the NPS went forward with roadway development at canal level in December 1957, awarding a grading contract to Wright Construction Company of Odenton, Maryland in the amount of \$1,037,235. By July 1959 the company completed the initial grading and drainage work for the 3.9-mile segment between Little Falls Branch and Rock Run (from just above the D.C. line to the vicinity of the current Beltway interchange). While the BPR had insisted on constructing a four-lane roadway, the NCPC was unable to acquire a sufficiently wide right-of-way in the tightly constricted stretch between Little Falls and Glen Echo and the NPS was unwilling to sacrifice the canal itself to provide room for a four-lane road. With the exception of a short segment near the community of Brookmont, the BPR had to settle for a two-lane, largely undivided roadway from Glen Echo to the District Line. From Glen Echo to the parkway's intersection with MacArthur Boulevard just upstream from the Navy's David Taylor research facility, the primary design considerations involved the construction of interchanges between the parkway drive and the Capital Beltway and Cabin John Parkway. The NPS had strongly opposed the construction of Cabin John Parkway as destructive to the scenery of the quiet stream valley and potentially detrimental to the historic Washington Aqueduct bridge under which it would pass. Maryland highway officials insisted on the need for this express short-cut between the Beltway and the GWMP connection to Washington. Along with their desire to build a four-lane express route through the Cabin John valley, the Maryland highway commission sought to save money on the Capital Beltway bridge over the Potomac River by building the Maryland approach on an earthen causeway instead of carrying it over the canal and parkway on an expensive overpass structure. The Maryland-National Capital Park and Planning Commission backed the highway commission's proposals, and pressure on the NPS mounted as the highway engineers insisted they could not proceed with the design of the Capital Beltway bridge over the Potomac River until the situation was resolved and the various interchange configurations settled. The NCP&PC and its successor the NCPC also supported the Cabin John Parkway as an essential "Northwest Freeway" link in comprehensive regional transportation plans. The NPS was forced to acquiesce to the construction of Cabin John Parkway, but was able to force the engineers to carry the Beltway over GWMP on a viaduct which was neither as visually obtrusive nor as environmentally disruptive as the proposed fill. Even this construction required the demolition of one of the canal's historic stone lockhouses, however. The Mt. Glory Cemetery, an African-American burial ground located near the parkway intersection with MacArthur Boulevard, was another casualty of this phase of road development. The grading between Carderock and the David Taylor facility was completed by June 1961, but protracted delays over the cemetery relocation, a storm sewer development, and negotiations

³⁷³ Mackintosh, "George Washington Memorial Parkway: Administrative History," 67-72; Davis, "Rock Creek and Potomac Parkway, HAER Report No. DC-697," 114-33.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 174)

with the Corps of Engineers over the effects of parkway traffic on MacArthur Boulevard prevent the NPS from opening the roadway from the Beltway to MacArthur Boulevard until November 1964.³⁷⁴

Completion of the section between the Beltway and the District of Columbia line was delayed by construction difficulties caused by the steep terrain, disagreements over the disposition of parkway traffic at either end, and the conflicting goals of the NPS and District of Columbia highway officials. The Senate Park Commission and the NCP&PC had envisioned a continuous parkway stretching from Georgetown to Chain Bridge and on to Great Falls. The proposed Georgetown to Chain Bridge segment was variously called Potomac Drive, Potomac River Parkway, and Potomac Palisades Parkway. Since this segment was within the District of Columbia, it was not technically a part of GWMP. District traffic officials wanted to use federal highway development funds by proposing to upgrade the existing road along the canal between Georgetown and Chain Bridge into a four-lane expressway for general traffic use, which would link up with the Capital Beltway via GWMP and the Cabin John Parkway, or even more directly by means of an expressway or parkway along the stream valley formed by Little Falls Branch. The D.C. highway department's strategy was to oppose the connection to GWMP and let conditions deteriorate to the point that public outcry over the lack of sufficient commuter road would allow it proceed with its plans. Without this connection, the utility of the roadway in the Montgomery County segment of GWMP was seriously compromised. In 1959 the NPS asked Congress to appropriate money to improve this section, but D.C. officials helped persuade the House Appropriations Committee to turn down the NPS's request. The Senate backed the request, however, and a concerted lobbying effort convinced the House to reconsider and support the appropriation with the stipulation that the money could only be used for the section between Chain Bridge and the District Line. Congress approved \$165,000 for grading this stretch in fiscal 1960, followed by \$175,000 for paving in 1961. The D.C. Highway Department refused to approve the connection on the grounds that the steeply angled intersection between Canal Road and Chain Bridge would create an unacceptable traffic hazard. NPS designer William H. Haussman proposed routing the inbound traffic lanes underneath the bridge to eliminate the need for Virginia-bound traffic to make dangerous left-hand turns across oncoming traffic. This proposal called for the inbound roadway to cross to the river side of the canal 2,000' above the bridge, follow the riverbank for two-and-one-half miles, then rejoin Canal Road 1,500' upstream from Glover-Archbold Park. NPS regional director T. Sutton Jett opposed this configuration, however, maintaining that the dual highways would destroy the attractively wooded riverbank and proclaiming that the placid appeal and historic value of the old canal would be ruined if the NPS acquiesced in the highway engineer's desires to see it "sandwiched between two high-speed roadways." The NPS returned to its

³⁷⁴ Mackintosh, "George Washington Memorial Parkway: Administrative History," 72-77, 80-81; National Capital Park and Planning Commission, Regional Aspects of the Comprehensive Plan (Washington, D.C.: National Capital Park and Planning Commission, 1950), 32-34.

position that the Potomac Palisades Parkway should be a single, two-lane roadway, located more or less along the alignment of Canal Road. As D.C. highway officials continued to stall, the NPS proceeded with construction north of the district line. Steep slopes in the Brookmont area required an extensive retaining wall, which was constructed in 1960-61. Another distinct departure from standard parkway design practice was the decision to cantilever the northbound lanes over the southbound roadway just south of Glen Echo. Constricted by the steep terrain and the presence of the Glen Echo amusement park on the uphill side and the historic canal on the lower, BPR engineers built extensive retaining walls and carried the northbound roadway 20' above the southbound lanes on a reinforced-concrete slab that cantilevered 8' over the lower roadway. The parkway drive between Glen Echo and the district line was opened in January 1965. The short stretch between the district line and Chain Bridge was graded, but it remained unpaved as D.C. officials continued to use the missing link as a bargaining chip in their attempts to secure support for other expressway projects (Figure 180). Many commuters used the unpaved stretch to avoid crossing over to the Virginia section of GWMP or using the circuitous route around MacArthur Boulevard and Arizona Avenue (Figure 181). The highway department repeatedly barricaded the unofficial roadway, but since it was the most direct route from Washington to the Beltway, commuters defied attempts to end the practice and continued to use it regardless of its illegal status. By the end of the 1960s, district officials finally allowed the NPS to pave the gap. The roadway was officially opened in June 1970. Unless Congress authorizes additional construction--an unlikely event--this short stretch of pavement will stand as the last portion of the parkway to be completed.³⁷⁵

The movement to extend the parkway road system to Great Falls on the Maryland side lost considerable momentum in the mid 1950s and was more or less dead by 1960. The protests over the proposed the C & O Canal Parkway from Great Falls to Cumberland convinced the NPS that the roadway was both unwanted and politically inexpedient. Any attempt to construct additional roadways was sure to outrage preservationists. The proposed bridge at Great Falls would certainly have elicited widespread condemnation from environmentalists, and was no longer defensible as a pragmatic measure after the decision was made to build a major bridge downstream for the Capital Beltway. The decision to cut parkway road development just north of the Beltway in Montgomery County seems to have been satisfactory to planners, preservationists, and highway engineers alike.

³⁷⁵ NCP&PC, Regional Aspects of the Comprehensive Plan, 31-34; D.C. Board of Commissioners, Transportation Plans for Washington (December 1946); Mackintosh, "George Washington Memorial Parkway: Administrative History," 77-84; Jett quoted, p. 80; "Squeeze Put On Parkway," Washington Evening Star, 27 November 1960; "The only unfinished portion of the long-awaited George Washington Memorial Parkway in Montgomery County . . ." [photo caption], Washington Evening Star 19 June 1967; "Parkway is Opened--Finally," Washington Evening Star 16 June 1970.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 176)

The existence of two George Washington Memorial Parkways on different sides of the Potomac River was a continual source of confusion. During the early 1960s there was some consideration of retaining the GWMP designation for Virginia side and grouping the entire Maryland-D.C. stretch under the name Palisades Parkway, but NPS officials vetoed the suggestion as contrary to the original concept of a regional parkway unified under one name and defined by its historic associations with George Washington. As complaints over the confusing dual parkways surfaced repeatedly, however, the park service began considering alternatives. Suggestions were made for paired George and Martha Washington parkways, but NPS officials apparently considered this inappropriate as well. The location of the Clara Barton National Historic Site adjacent to the parkway at Glen Echo provided the perfect opportunity for redesignating the Maryland portion of the roadway in a manner that would help avoid confusion while retaining the parkway's accent on history and commemoration. At the urging of Maryland Rep. Constance Morella, the GWMP roadway between MacArthur Boulevard and Canal Road was officially renamed Clara Barton Parkway on November 28, 1989. The redesignation only applied to the roadway. The surrounding park land continues to be called George Washington Memorial Parkway, and the Clara Barton Parkway is maintained and administered by the GWMP unit of the National Park Service.³⁷⁶

³⁷⁶ Office of Public Affairs, National Park Service, U.S. Department of the Interior. The National Parks Index 1993 (Washington, D.C.: Government Printing Office, 1993), 49, 86; Mackintosh, "George Washington Memorial Parkway: Administrative History," 84-86.

MAJOR ALTERATIONS 1930-1997Major Alterations to Mount Vernon Memorial Highway³⁷⁷

As previously discussed, the first two major alterations to Mount Vernon Memorial Highway were bureaucratic rather than physical. With the passage of the Capper-Cramton Act on May 29, 1930, the memorial highway was officially incorporated into the larger George Washington Memorial Parkway project, which was projected to extend from Mount Vernon to Great Falls along both sides of the Potomac River. Though technically part of George Washington Memorial Parkway, it would retain its name in most official and unofficial circles until the latter project was more fully developed. The dual designation continues to be a source of some confusion. The second major bureaucratic change was the transfer of authority over the memorial highway from the OPB&PP to the NPS when the latter agency assumed responsibility for the national capital park system on August 10, 1933. These managerial transitions did not have a significant physical impact on the parkway landscape.³⁷⁸

Throughout the 1930s the NPS and the NCP&PC repeatedly discussed the possibility of extending the memorial highway south to connect with Wakefield and other historic sites, perhaps even as far as Yorktown, where it would link up with Colonial Parkway. Tentative plans for the initial extension to Woodlawn and Fort Belvoir were drawn up, but the project lacked the imaginative appeal and natural resource protection aspect of the northern extension to Great Falls, and was eventually abandoned. Another proposed modification that made it into the tentative drawing stage before being abandoned for various economic and political reasons was an Alexandria bypass that would ease congestion, maintain the parkway's waterfront configuration, and provide additional parkland by skirting the city along the Potomac waterfront. Alexandria commercial and political interests were opposed to this proposal because it would preclude commercial development of the waterfront and draw business away from Washington Street merchants. BPR chief MacDonald and NCP&PC Chairman Frederic Delano agreed on the need for an Alexandria bypass, but were unable to get approval during the 1930s. After World War II, the BPR decided that the cost of acquiring land for the bypass had become prohibitive. NPS officials rejected a 1935 Virginia State Employment Service proposal to put a relief crew to work spelling out the names of the

³⁷⁷ Edaw, Inc., "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2. Documentation," (prepared for National Park Service/National Capital Region, n.d) provides a detailed, station by station accounting of alterations to Mount Vernon Memorial Highway between 1932 and the mid-1980s. The following section is a brief overview of the major changes and proposed changes between 1932 and 1997.

³⁷⁸ Office of Public Affairs, National Park Service, U.S. Department of the Interior. The National Parks Index 1993 (Washington, D.C.: Government Printing Office, 1993), 86.

original thirteen states along the sides of the highway with ornamental flowerbeds. This unexpected echo of the original memorial avenue proposal was not in keeping with management guidelines calling for a naturalistic parkway landscape.³⁷⁹

National Airport

The first major physical alteration to the parkway landscape was necessitated by the construction of National Airport from 1938-1941. Parkway designers had foreseen that the airport would be developed and included an overpass to accommodate traffic to the facility. The spatial requirements of modern airfields were expanding so rapidly, however, that this proved to be an insufficient allowance for the airport's needs. The airport developers received congressional authority to appropriate the bulk of parkway lands between Roaches Run and Fourmile Run, forcing the BPR to cede the original roadway and right-of-way. The BPR briefly considered sinking the roadway in a tunnel under the airport, but decided to construct a new roadway skirting the airport's inland border (Figures 182-183).³⁸⁰ The new roadway that opened on August 14, 1940 was a bit shorter, and arguably safer and more efficient than the more sharply curved and hilly stretch it replaced, but the loss of the Capital Overlook and Abingdon site was a significant blow to the aesthetic and historical integrity of the parkway.³⁸¹ Airport authorities even secured approval from the NPS and NCP&PC to demolish what was left of the Abingdon ruins, but eventually decided to route the airport's internal driveways around the historic site.³⁸² When the memorial highway was relocated, the stone-faced grade separation structure that was originally designed to carry parkway traffic over the airport access road was incorporated into the internal circulation system of National Airport. The

³⁷⁹ Letter, C. Marshall Finan to J. William May, Virginia State Employment Service, 13 November 1935. Discussions about the southern extension of Mount Vernon Memorial Highway can be found in National Park Service, Central Classified File 1933-1949, National Parkways: George Washington Memorial, Box 2774, Record Group 79, National Archives. Letter, MacDonald to Delano, 22 November 1937; letter, MacDonald to Delano and accompanying report on bypass project, 23 February 1938; Grant to MacDonald, 28 March 1945; MacDonald to Grant, 17 April 1945; all in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1395, RG 30, National Archives; "Waterfront Link in Road Stressed," Washington Evening Star 23 March 1936.

³⁸⁰ Memo, Simonson to H. S. Fairbank, 8 February 1938, in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1395, RG 30, National Archives.

³⁸¹ "Road to Skirt Gravelly Point Approved," Washington Post, 18 February 1939; "Mt. Vernon Boulevard Reopened," Washington Post, 15 August 1940; "Relocated Highway Opens," Washington Post 15 August 1940.

³⁸² Memo, Thomas Vint, NPS Chief of Planning to Cammerer, 2 March 1939; Memo, John Nolen, NCP&PC Director to Cammerer, 8 April 1939; both in National Park Service, Central Classified File 1933-1949, National Parkways: George Washington Memorial, Box 2774, Record Group 79, National Archives. For a detailed account of National Airport's development, see James Goode, "Flying High: The Origin and Design of Washington National Airport," Washington History 1 (Fall 1989), 16.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 179)

expansion of National Airport in the mid-1990s required significant alterations to the existing roadway and parking lot system, resulting in the destruction of the historic 1932 grade separation structures, which was deemed ineligible for inclusion in the National Register of Historic Places. Eliminating approximately one mile of riverfront and replacing the views over the Potomac with a closeup of the landing field and terminal facilities dramatically reduced the natural attractions of the parkway between Washington and Alexandria. As National Airport continued to expand over the ensuing decades, a lengthy section of this drive now resembles an access road through an industrial park. The sweeping curve that provided a prolonged dynamically changing view of the Washington skyline, which the BPR highlighted in a number of photographs centered on the Washington Monument, was also sacrificed to make way for the airport.

Alterations to Roadway and Circulation System

Discussions about redesigning the memorial circle at the north end of Alexandria began almost as soon as the parkway was completed. The NPS referred to it as an "accident breeder" in 1934 because speeding vehicles had a tendency to run right through the middle, and began considering various ways of elongating it into an ellipse so that fast moving autos wouldn't have to swerve so suddenly around the tight-radius curves. No changes were made, however. The issue resurfaced in 1944 and another series of proposals was considered, but action was again deferred. Discussions about what to do with the circle dragged on through the 1950s. It was finally eliminated and replaced with traffic signals in 1961.³⁸³

To accommodate ever-increasing commuter traffic burdens, the parkway was transformed into a continuously divided motorway between Alexandria and Fourmile Run. The original road bed was used for the southbound motorway and a new parallel northbound roadway was constructed. The median is particularly wide and attractively wooded in the area on either side of the Washington Sailing Marina entrance. Near Crystal City it becomes narrower, dull, and uniform; the modern office towers of Crystal City, though erected well beyond the parkway borders, represent just the sort of architectonic intrusion that the original designers had hoped to prevent. Between the airport and the 14th street bridge, the existing median was maintained and the expected widening from four to six lanes was completed. Three underpasses were constructed to connect the airport and associated facilities with the road network and

³⁸³ Memo, Cammerer to Demaray, 19 January 1934 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives); "Revised Plan, Memorial Circle, Alexandria VA, June 1935"; "Report on Motor Vehicle Traffic at the 'Memorial Circle'-Arlington, VA," BPR Division of Design, 16 October 1935; Memo, H. J. Spelman, District Engineer, Arlington, VA to Toms, 16 September 1937; Letter, Spelman to H. E. Hilts, Deputy Commissioner, 22 November 1944; Letter, Spelman to Harry T. Thompson, Chief, Planning Division NCP/NPS, 22 February 1945 (all in Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1395, RG 30, National Archives). Date of memorial circle replacement from Edaw, Inc., "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2. Documentation," (prepared for National Park Service/National Capital Region, n.d.) 103.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 180)

communities west of the memorial highway. None are particularly attractive and only one makes an even vague gesture toward recasting traditional parkway bridge aesthetics in a more modern idiom of exposed steel and concrete. One of these carries the Washington Metro, while the others carry Route 1 and the access road to Crystal City. The original Four Mile Run Bridge was demolished and replaced by a wider modern structure in 1977. The Roaches Run Bridge was substantially altered in the 1960s to accommodate the wider roadway and increased traffic loads. During the 1980s a continuous but narrow median was constructed in the vicinity of Fort Hunt and the access roads realigned to improve safety and traffic flow.³⁸⁴

The most controversial changes to the memorial highway during the 1940s and 1950s were the construction of a number of new entrances to provide access to private developments and public recreational facilities. Most of the major federal agencies involved in the discussion, including the NPS, the NCP&PC, and the Public Roads Administration (the BPR's successor agency, subsequently referred to as the PRA) opposed the construction of new entrance roads as contrary to the limited-access design principles that had governed the parkway's development. On the opposite side of the argument were influential local real estate developers, who demanded direct access from the apartment complexes, commercial centers, and subdivisions they were erecting to capitalize on northern Virginia's booming economy. These businessmen held considerable sway with local politicians, who apparently had little difficulty persuading Congress to favor business interests over the obstructionist pleas of sentimental planners. Several additional entrances were added to the parkway north and south of Alexandria over NPS objections during the late 1940s and early 1950s. The NPS, the NCP&PC, and the Public Roads Administration (the BPR's successor agency, subsequently referred to as the PRA) opposed the construction of new entrance roads as contrary to the aesthetic and utilitarian concerns that had governed the parkway's original design. Assistant Secretary of the Interior Oscar Chapman protested the congressional decision to permit additional access to the parkway as a direct attack on the historical integrity and symbolic function of the memorial highway. Chapman objected that the original legislation had clearly intended that the parkway serve as "a suitable memorial connection between Washington and historic Mount Vernon," not as "a high speed highway serving an area of increasing population density." The new legislation had been pushed through the House Public Lands Committee by local representatives without consulting the appropriate federal officials, all of whom

³⁸⁴ Memo, Cammerer to Demaray, 19 January 1934 (BPR, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1396, RG 30, National Archives); "Revised Plan, Memorial Circle, Alexandria VA, June 1935"; "Report on Motor Vehicle Traffic at the 'Memorial Circle'-Arlington, VA," BPR Division of Design, 16 October 1935; Memo, H. J. Spelman, District Engineer, Arlington, VA to Toms, 16 September 1937; Letter, Spelman to H. E. Hilts, Deputy Commissioner, 22 November 1944; Letter, Spelman to Harry T. Thompson, Chief, Planning Division NCP/NPS, 22 February 1945 (all in BPR Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1395, RG 30, National Archives). Date of memorial circle replacement from Edaw, Inc., "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2. Documentation," (prepared for National Park Service/National Capital Region, n.d), 48-53, 103.

unsuccessfully objected to its passage.³⁸⁵ The Washington Evening Star editorialized in favor of "Preserving the Parkway" but to no avail, as local developers and their allies succeeding in getting access roads approved to apartment complexes and a shopping center along the parkway route south of Alexandria.³⁸⁶ The PRA even protested the NPS's decision to build access roads to its new picnic grounds at Collingwood and Belle Haven. Urged on by Simonson, PRA engineer H. J. Spelman complained to National Capital Park superintendent Irving Root that compromising the original parkway design principles by building picnic ground accesses was not only undesirable in itself, it undermined ongoing efforts to prohibit the construction of additional entrances from local roads and private property.³⁸⁷ The NPS built an access to the new Belle Haven picnic area in 1948 and significantly redeveloped the area in the late 1950s. The entrance to the Belle Haven Marina was again reconfigured in 1984. The NPS also developed the Collingwood picnic area in 1948 and constructed a new access to Fort Hunt that allowed northbound vehicles to enter and exit the area without crossing oncoming traffic. A continuous median was added to reinforce the new circulation pattern. Additional accesses were permitted over the years to accommodate the Hunting Towers and Porto Vecchio developments.³⁸⁸

While the Mount Vernon Terminus has remained essentially unchanged, the roadways surrounding the original cloverleaf interchange have been repeatedly reconfigured to accommodate subsequent bridge construction and the development of I-395 and the Shirley Expressway. A second grade separation was constructed for the supplementary northbound 14th Street Bridge in 1950. This structure is a stone-faced reinforced concrete double-arch that intentionally mirrors the original 14th Street-Highway Bridge underpass. This structure has been widened and the original tight-radius cloverleaf ramps were first enlarged and then largely eliminated to form today's asymmetrical interchange. In a modern-day echo of the late-nineteenth century Mount Vernon Avenue Association proposal for bridges and statues honoring colonial figures and revolutionary war notables, the two 14th Street bridges are officially designated Heroes Bridge and George Mason Bridge. Between 1984 and 1986 the NPS and the Federal Highway Administration undertook a \$20 million effort to refurbish the basic road structure. This project involved repairing or completely replacing damaged

³⁸⁵ "Mt. Vernon Road Outlet Protested By U.S. Agencies," Washington Evening Star, 24 March 1948.

³⁸⁶ "Preserving a Parkway" [editorial] Washington Evening Star, 8 June 1948.

³⁸⁷ Letter, Spellman to Root, 29 April 1949; Letter, Simonson to Spellman 15 April 1949 (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1930-50, Box 1395, RG 30 National Archives).

³⁸⁸ Edaw, "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2. Documentation," 10, 120-24, 136.

concrete slabs with new concrete that was carefully mixed and finished to replicate the appearance of the original surface.³⁸⁹

General Landscape

Despite these new entrances and the construction of more up-to-date merging lanes at problematic intersections, the NPS has been able to maintain the roadway's historical integrity to a large degree, especially in the more lightly trafficked region south of Alexandria. The quaint colonial signs have been replaced by standard park service-issue models, and the picturesque rustic guard rails, bus shelters, and light poles have either been eliminated or replaced by features that conform to modern safety codes. The absence of these original features makes the memorial highway appear less rustic and picturesque than it once was, aligning it more with the streamlined aesthetic of later parkways and highways. The parkway's vegetation has matured to produce an impressively wooded landscape that fulfills the memorial highway's function as a refuge from the sights and sounds of modern urban life. From a traditional picturesque point of view, the parkway landscape is now somewhat overgrown in many regions, with thick and untended tree growth replacing the subtle variations intended by its designers and obstructing some of the carefully planned vistas envisioned in the original plans. This transformation reflects both the limited budgets of contemporary park managers and the prevailing tendency to value park lands as "natural habitat" rather than as carefully composed scenery. Historic photographs suggest that the parkway landscape may have reached its apogee in the 1940s, when the plantings had matured and the original rustic features remained by and large in their intended condition (Figure 184).

The parkway boundaries have been selectively broadened over the years through the purchase and transfer of additional tracts. The most significant of additions were the acquisition of Daingerfield Island from the Smoot Sand and Gravel Company in exchange for dredging rights in a limited section of the Potomac River, which prevented conflicting residential development and led to the development of the Washington Sailing Marina; the expansion of parkway boundaries in the Dyke Marsh wildlife refuge area; the acquisition of several tracts in the Belle Haven area that prevented potentially adverse development; and the addition of Jones Point, with its historic light house and original District of Columbia boundary marker.³⁹⁰

³⁸⁹ Claudia Gelzer, "Traffic takes its toll on safety," The Journal (Arlington, Virginia), 30 March 1989; Edaw, "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2. Documentation," 5, 10, 120-24, 136.

³⁹⁰ The 1931 supplemental appropriation left the project with a post-completion surplus of \$89,839.23, which was applied, along with various other funds and mechanisms such as land exchanges, to expand the parkway boundaries in critical areas; U.S. Congress, Senate, Draft of a Proposed Provision pertaining to the appropriation "Mount Vernon Memorial Highway, Federal Works Agency, Public Roads Administration (76th Cong., 3d Sess., 28 May 1940, Document No. 220); U.S. Congress, House, Providing for the Acquisition of Additional Land along the Mount Vernon Memorial Highway . . . (76th Cong., 3d Sess., 19 August 1940, Report No. 2857 [to accompany H. R. 10221]);. Edaw, "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2.

The Evolving Memorial Landscape

Many of the original memorial plantings have died or been eliminated by changes to the highway alignment around the intersections where they were often located for increased prominence. A few have been replaced with new saplings, as with the case of the United Daughters of the Confederacy red oak at South Wellington. Additional commemorative elements have been added as well. The most notable of these are the Navy and Marine Memorial and the LBJ Memorial Grove, both located on Columbia Island. The Navy and Marine Memorial, also known as "Gulls and Waves," was placed on its site near the southeast tip of Columbia Island on 1934. Designed by sculptor Ernesto Begni del Piatta over a decade earlier, the cast aluminum rendition of sea gulls swooping over a cresting wave was originally to have been sited at the tip of Hains Point, but the Commission of Fine Art deemed it too "romantic" and "picturesque," and thus not "monumental" enough for such a conspicuous and symbolically important location. Gilmore Clarke objected to its placement on Columbia Island on the usual grounds that naturalistic park and parkway landscapes were not the appropriate location for elaborate sculptural displays. Clarke unsuccessfully urged that it be hidden from motorists using the parkway drive behind a dense screen of plantings.³⁹¹

Located on the other side of the memorial highway adjacent to the Columbia Island Marina, the 1976 Lyndon Baines Johnson Memorial Grove blends more harmoniously with the original parkway landscape. The rugged pink granite obelisk and informal grove of white pine trees is meant to evoke President Johnson's native Texas hill country. According to its designer, landscape architect Meade Palmer, LBJ Grove was intended to serve as a contrast to the imposing architectonic display of conventional presidential memorials. The modest obelisk, winding paths, and fragrant pines, azaleas, and dogwoods were conceived as "a living place where people could enjoy the pleasures and beauties of nature." This memorial can also be reached by a wooden footbridge extending from the Pentagon parking lot over Boundary Channel. The footbridge was completed in 1977. Visitors who want to learn more about the site can push a button and listen to a short recording of Lady Bird explicating its significance. The former first lady was honored in 1969 by the redesignation of the central portion of Columbia Island as Lady Bird Johnson Park. As part of her campaign to beautify American

Documentation," 10;

³⁹¹ Commission of Fine Arts, Commission of Fine Arts Tenth Report, July 1, 1921-December 31, 1925 (Washington: Government Printing Office, 1926), 99-101; Letter, Clarke to George Beatty, 21 September 1936, Gilmore Clarke File, Commission of Fine Arts General Files, 1910-154, Box 14, Record Group 66, National Archives.

roadsides, Mrs. Johnson had spearheaded an effort to plant thousands of daffodils on Columbia Island and along other prominent entrances to Washington.³⁹²

While few monuments were placed along the parkway itself, they played a prominent role in creating the formal approach to Arlington National Cemetery. An abbreviated version of the original "Highway of Heroes" concept, "Memorial Drive," as it is officially known, is technically part of the parkway reservation. Bronze figures representing a variety of individuals and organizations flank the formal avenue in a manner that recalls the Mount Vernon Avenue Association's original proposal. Recent additions to the memorial avenue include the Sea Bee monument and the Armored Services memorial, the latter of which recalls turn-of-the-century calls for an encyclopedic display of military ordinance with its detailed etchings of armored vehicles. The heroic "Iwo Jima" memorial and the starkly modernists Netherlands Carillon also rest on land that is administered by GWMP. A markedly different form of memorial, the tangled second growth wilderness of Theodore Roosevelt Island, was placed under the parkway's administration in 1933. This largely undeveloped reservation of wood and marsh lands, formerly known as Mason's or Analostan Island, was intended to symbolize Theodore Roosevelt's contributions to the American conservationist movement.

The most recent addition to the parkway's memorial landscape is the Women In Military Service For America Memorial, located at the terminus of the ceremonial approach to Arlington Cemetery. Authorized by Congress and President Ronald Reagan in 1986, the memorial commemorates the contribution of women to the nation's defense. Like the decision to designate the Maryland section of GWMP as Clara Barton Parkway, the creation of the Women In Military Service For America Memorial reflected the growing determination to give official recognition to the role of women and minorities in shaping American culture. The Women's Memorial, as it will be known in short, exemplified the contemporary desire to broaden the standard view of American history by enriching the memorial landscape of the nation's capital with tributes to previously excluded groups and individuals. In both physical and symbolic terms, the Women's Memorial embedded the story of women's roles into the traditional narrative of civic and military history inscribed in the landscape of George Washington Memorial Parkway and Arlington Cemetery. Physically and symbolically, locating the memorial at the place of honor at the terminus of the statue-lined approach to Arlington Cemetery united contemporary political and historical concerns with the original vision of the memorial avenue as linear lesson in American history that would be articulated through monuments honoring the nation's outstanding citizens.³⁹³

³⁹² Information on Lady Bird Johnson Park and LBJ Memorial Grove from Edaw, "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2. Documentation," Alexandria, Virginia, n.d., 25-26.

³⁹³ "The Memorial," informational brochure distributed at the Women In Military Service Memorial, 1997.

The architectural design of the Women's Memorial similarly integrated contemporary concerns with traditional values and symbolism. The designers, Marion Gail Weiss and Michael Manfredi, skillfully incorporated the memorial into its physical and symbolic surroundings. The memorial is literally embedded into the historic fabric of the site, appropriating and transforming the neoclassical Hemicycle designed by McKim, Mead, and White to serve as the visual terminus of the memorial avenue and the symbolic gateway to Arlington Cemetery. The Hemicycle was completed in 1932 as part of the grand plan uniting the National Mall, Arlington Memorial Bridge, Mount Vernon Memorial Highway, and Arlington Cemetery, but it was never provided with the sculptural embellishments outlined in the original design. Integrating the Women's Memorial with the existing structure enabled the designers to place the new monument in a visually prominent and symbolically potent location while giving new life and added meaning to an under-utilized site. By the 1980s, the original Hemicycle structure was exhibiting severe spalling and other signs of decay, so the Women's Memorial project was also seen as a means of combining critical restoration needs with new political and historical agendas.³⁹⁴

The three key elements of the Women's Memorial are the fountain and reflecting pool located in front of the original Hemicycle structure, an underground exhibit/theatre/shop/office complex housed behind the walls of the Hemicycle in a new space excavated into the hillside, and a series of glass tablets arrayed on the enlarged terrace above the Hemicycle; these tablets are inscribed with quotations relating to women in military service. Entrance to the underground area was provided by piercing the Hemicycle wall with four arched doorways that harmonize with the blank niches provided by McKim, Mead, and White. Stairways also lead down from the terrace above. The interior of the memorial contains a 196-seat theater for showing films depicting the roles women have played in America's military history, a computerized interactive register where visitors can look up names and stories of individual servicewomen, a conference room, administrative offices, a gift shop, and a Hall of Honor. These rooms are linked with a semicircular hallway containing 16 exhibit alcoves housing displays of texts, images, and artifacts relating to women in military service.³⁹⁵

Groundbreaking ceremonies for the Women In Military Service For America Memorial were held on June 22, 1995. Construction began the following March. By the time the project was completed, total cost for design and construction reached \$21.5 million. The memorial was dedicated on October 18, 1997 by Vice President Albert Gore and Mrs. Gore, with Brigadier General Wilma L. Vaught, USAF (Ret.), President of the Women In Military Service For America Memorial Foundation as honored guest. Thousands of active duty servicewomen,

³⁹⁴"The Memorial," informational brochure distributed at the Women In Military Service Memorial, 1997.

³⁹⁵"The Memorial," informational brochure distributed at the Women In Military Service Memorial, 1997; "Tapping Keys to History," Washington Post, October 21, 1997.

women veterans, and their families and friends attended the ceremonies. Former Senate leader, decorated World War II veteran, and unsuccessful 1996 Republican Party presidential nominee Robert Dole culminated the four days of dedication exercises with a wreath-laying ceremony at the Tomb of the Unknowns.³⁹⁶

Added Recreational Features

The parkway's recreational facilities have been increased and improved over the years as well. These include the Columbia Island Marina, the Washington Sailing Marina, the Belle Haven Marina, Fort Hunt Park, and the picnic areas at Belle Haven and Collingwood. The proposed bridle and pedestrian paths were never completed, but the outdoor recreation boom of the 1960s and 1970s led to the construction of a combined bicycle/footpath, or "Multi-Use Trail," stretching from the Memorial Bridge to Mount Vernon. The trail was built by the National Park Service with extensive volunteer participation. A gravel path running from 14th Street Highway Bridge to Alexandria was completed in April 1972 at cost of \$27,000. This provided a safer, more attractive, and more permanent solution to the park service's policy of closing two lanes of the memorial highway for bicycle and pedestrian use on Sundays from 8 am to 2 pm. Over 5,000 people per day were taking advantage of this option before the multi-use trail was completed. The popularity of the Washington to Alexandria trail encouraged the NPS to extend it from Alexandria to Mount Vernon. Construction on the Alexandria to Mount Vernon segment began in September 1972 and the path was completed in 1974. An extensive network of timber bridges and board walks was built to carry the trail over uneven ground and ecologically sensitive areas such as Dyke Marsh. The trail's popularity soon required replacement of the original cinder surface with a more durable asphalt pavement. In the 1980s the multi-use trail was extended from Columbia Island to Theodore Roosevelt Island and Key Bridge. An overpass constructed by the National Park Service and the Commonwealth of Virginia's Division of Parks and Recreation in 1988 provides a safe and direct connection with Rosslyn, Virginia. On the Maryland side, several handicapped accessible overpasses constructed across Clara Barton Parkway in the 1960s provide access to the towpath trail system along the Chesapeake and Ohio Canal National Historical Park. A rest area for multi-use trail users, complete with benches, a water fountain, and screen plantings, was added just south of the Wellington Underpass in 1995.³⁹⁷

³⁹⁶"The Memorial," informational brochure distributed at the Women In Military Service Memorial, 1997; "To Servicewomen, A Mission Accomplished," Washington Post, October 20, 1997.

³⁹⁷Edaw, "Cultural Landscape Report Mount Vernon Memorial Highway. Volume 2. Documentation," 10-20; "Bike Path With 150-Year-Old View," Washington Post, 28 September 1972.

Postscript: Alterations and Management Issues in the 1990s

With commuter traffic volumes increasing at a rapid rate (17.5 per cent between 1988 and 1994 alone), the NPS finds itself caught between pressure to further upgrade the parkway to meet modern highway safety standards and its long-standing mandate to preserve scenery and provide recreational opportunities for the Washington region. The NPS has also committed to managing the roadway as an historic resource in and of itself. In 1981 the NPS nominated the memorial highway for inclusion on the National Register of Historic Places, citing it "as the first parkway constructed and maintained by the U.S. Government and the first such road with a commemorative function explicit in its name and alignment." Acknowledging that as an example of pioneering motor parkway construction, the memorial highway was predated by the Bronx River Parkway and other Westchester County developments, the historic register nomination asserted that it was "probably the least altered of such early roads in the United States today."³⁹⁸ The northern sections of George Washington Memorial Parkway were recommended similarly for inclusion in the National Register of Historic Places in 1992, as part of a group nomination aimed at conferring official recognition on the major parkways of the national capital region as an illustration of coordinated regional planning and exemplary landscape design. In addition to proclaiming its status as a classic example of twentieth-century parkway design and regional planning, the nomination for the later sections of the parkway also singled it out for its associations with George Washington and for its function as a commemorative tribute to both Washington and Clara Barton. The parkway was also cited for its natural resource preservation features and for its symbolic function as a designed entranceway to the nation's capital.³⁹⁹

George Washington Memorial Parkway's status as a major component of the region's commuter network helped fuel a controversial 1995 Clinton administration proposal to transfer responsibility for the roadway's upkeep to the states of Maryland and Virginia. Under the proposed transfer, the roadways of George Washington Memorial Parkway, Suitland Parkway, and Baltimore-Washington Parkway would be maintained by the states through which they passed, while the federal government would continue to own and care for the surrounding park lands. The NPS had periodically considered this move since the 1950s, but the states had rejected it at every turn on the tenuous grounds that these parkways provided access to federal

³⁹⁸ Barry Mackintosh, "Mount Vernon Memorial Highway National Register of Historic Places Registration Form," National Park Service, U.S. Department of the Interior, 1981.

³⁹⁹ Jere Krakow, "George Washington Memorial Parkway National Register of Historic Places Registration Form," National Park Service, U.S. Department of the Interior, 1992. Krakow also produced a brief and somewhat fractured history of the major parkways in the Washington area, Historic Resource Study: Rock Creek and Potomac Parkway, George Washington Memorial Parkway, Suitland Parkway, Baltimore-Washington Parkway (National Park Service, U.S. Department of the Interior, 1990).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 188)

facilities and were thus properly the responsibility of the federal government. Transferring the Washington-area parkways to the states fit perfectly within the Clinton administration's ballyhooed efforts to "streamline" the federal government, but local representatives once again protested the maneuver, employing the "unfunded mandate" rhetoric popularized by House Republicans as a means of opposing the shifting of federal responsibilities to the individual states. State transportation officials also questioned the logistics and practicality of dividing responsibility for the roadways and surrounding park land between two separate entities. Administration interest in the parkway transfer appears to have been short-lived. George Washington Memorial Parkway appeared destined to remain a wholly federal entity.⁴⁰⁰

The parkway retains its original landscape character to a remarkable degree, despite the fact that it is the most heavily trafficked road in the National Park System, carrying in excess of 80,000 vehicles a day.⁴⁰¹ The most significant infringement on the original design since the construction of National Airport and the elimination of the Alexandria Memorial Circle took place during the mid 1990s on the segment of George Washington Memorial Parkway between Theodore Roosevelt Memorial Bridge and Spout Run, where a major reconstruction effort intended to increase the traffic-carrying capacity of this congested stretch resulted in the elimination of a substantial section of attractively wooded median and the cutting of many large trees on the steep banks above the parkway. The roadway was significantly widened throughout this section to provide additional lanes for merging, acceleration, and deceleration. Median traffic barriers were installed along with modern mountable curbs and gutters. Spout Run Parkway itself was renovated during the initial stage of this project.⁴⁰²

The NPS and the Federal Highway Administration maintained that these renovations remained true to parkway design principles because the new concrete guardwalls and retaining walls were covered with hand-laid stone veneer. Regardless of their fine craftsmanship, however, these walls overwhelm the remnants of the surrounding natural landscape, calling attention to the constructed aspect of the parkway in a manner that would have been anathema to prewar landscape architects. The steel-backed timber guardwalls employed along Spout Run Parkway are less visually obtrusive and more in character with the rustic log rails that flanked the

⁴⁰⁰ Stephen Fehr, "Clinton Wants Maryland, Virginia to Take U.S. Parkways," Washington Post, 27 March 1995.

⁴⁰¹ Claudia Gelzer, "Traffic takes its toll on safety," The Journal (Arlington, Virginia), 30 March 1989; Alice Reid, "A Circle Tour of Frustration," Washington Post, 5 May 1996.

⁴⁰² Outline of improvements is from 1993 "Programmatic Agreement" between NPS, Virginia State Historic Preservation Office, Advisory Council on Historic Preservation, Federal Highway Administration, and D.C. State Historic Preservation Office (copy provided by GWMP historian Creg Howland).

original parkway.⁴⁰³ The stone guardwalls may become less obtrusive with age as the rock weathers to take on a more natural appearance, but the extensive retaining walls mandated by the additional excavations are a significant blow to the parkway's appearance and historical integrity. A major tenet of parkway design, it will be recalled, was that picturesquely planted, relatively gradual side slopes were a key ingredient in the effort to make the roadway "lie lightly on the land," while deep cuts and fills and broad expanses of pavement were classic examples of the heavy-handed highway engineering ethos that parkway designers were trying to supplant. No amount of attractive rock work could conceal such a basic violation of parkway design principles. Eliminating the substantial tree growth that had been consciously preserved and nurtured by previous designers reflected a similar sacrifice of parkway aesthetics for the sake of improved traffic efficiency. Until the summer of 1995, the tall, overhanging trees created a soothing sylvan tunnel effect which, depending on the direction of travel, either provided a final immersion in greenery before the motorist entered the maze of overpasses and the broad open lawns of Columbia Island, or served as a strikingly immediate transition from the stark urban freeways that converge on the center of the parkway and the woodland landscape of the northern parkway. The saplings planted by the NPS will eventually mature, but they are too few in number and too far removed from the motorway (in accordance with modern safety standards) to recapture the earlier effect. Plans to reapply the original stone facing to the northbound parkway bridge over Spout Run were abandoned when it was discovered that the stonework was too securely bonded to the concrete for practical removal. A footbridge carrying the Potomac River Trail over Spout Run will partially screen the new bridge facing from view.⁴⁰⁴

A series of highly publicized highway accidents during 1996 and 1997 focused attention on the parkway managers' dilemma in trying to balance the concerns of historic preservation, natural resource protection, and safe and efficient traffic distribution. Virtually every major accident on the parkway produced criticism of its "outdated" design and calls to construct expressway-standard safety features regardless of their impact on the parkway's visual appearance or historical integrity. Most of these complaints have been centered on the postwar sections of George Washington Memorial Parkway and on the heavily traveled section of the original memorial highway between Washington and National Airport. While the southernmost section between Alexandria and Mount Vernon still contains extensive stretches of undivided two-way traffic, the more heavily trafficked northern sections have proven to be more accident prone.

⁴⁰³ The Virginia Department of Historic Resources employed these arguments in emphasizing its preference for steel-backed timber guardwalls over stone-faced concrete for the renovation of Spout Run Parkway and GWMP (Letter, H. Bryan Mitchell, Deputy State Historic Preservation Office to Robert Stanton, Regional Director, NPS National Capital Region, February 23, 1992 (copy provided by GWMP historian Creg Howland)).

⁴⁰⁴ Letter, Audrey Calhoun, GWMP Superintendent to Alexander Wise, Virginia State Historic Preservation Officer, October 25, 1995 (copy provided by GWMP historian Creg Howland).

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 190)

The northern section of George Washington Memorial Highway carries an average of 45,000 cars a day, while the traffic count at National Airport reaches 80,000 vehicles per day. Motorists apparently exercise more caution when they know they are traveling winding roads and confronting oncoming traffic, while the higher design speeds and heavy commuter use of the northern parkway encourages excessive speeding. According to anecdotal evidence, few motorists even remotely observe the posted 50 mph speed limits and many drivers habitually treat the parkway as an express highway, routinely traveling at 60-70 mph.

A particularly dramatic fatal crash during the spring of 1996 set off a chain of protests that has forced the NPS to alter its long-standing opposition to the construction of visually intrusive safety measures. The accident occurred when two aggressive drivers began racing and harassing each other at speeds exceeding seventy miles an hour. After weaving through traffic for several miles, the cars eventually hit one another and then traveled across the median, striking oncoming vehicles and killing three people. Traffic improvement forces immediately capitalized on the accident as a gruesome example of the threats posed by the parkway's substandard safety features. The accident occurred at a point where the varying width median narrowed to cross one of the parkway bridges. The parkway median was only six to eight feet wide at the accident site and there was no guardwall separating the opposing traffic lanes. According to federal interstate highway standards, crash-proof safety barriers are required on medians less than thirty feet wide, but parkway designers have long preferred the visual appeal of uncluttered grassy medians. The parkway's curbs--designed to deter motorists from pulling off onto the landscape shoulders except at designated sites--also contributed to the severity of the accident by launching the speeding vehicles into the air. Curbs are rarely found on interstate highways for this reason.⁴⁰⁵

Despite the intense media scrutiny, parkway officials defended their policy of limiting alterations to the parkway landscape, pointing out that the primary cause of the accident was testosterone-fueled aggression accelerating into flagrantly unlawful behavior at speeds nearly twice the roadways's maximum limit. In an interview with the Washington Post, parkway Superintendent Audrey Calhoun emphasized that "GW Parkway was designed as a scenic drive" and underscored that it was intended for lower speeds and lighter traffic loads than ordinary expressways or interstate highways. Traffic analysts, in turn, accused park service officials of "sticking their heads in the sand" by pretending that motorists obeyed the low posted speed limits and insisted that the outdated parkway should be updated to safely accommodate the Washington region's expanding transportation needs. The American Automobile Association's Potomac Chapter's spokesman, John Undeland, singled out the parkway's historic bridges as particularly dangerous relics of an outmoded design aesthetic.

⁴⁰⁵Alice Reid, "When Charm, Safety Collide," Washington Post, 22 April 1996; Reid, "A Circle Tour of Frustration," Washington Post, 5 May 1996.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 191)

Undeland characterized the historic overpasses and underpasses as "cattle chutes," and insisted that the danger posed by stone piers and abutments standing only a few feet from the traffic lanes far outweighed their decorative appeal.⁴⁰⁶

The National Park Service again resisted demands to reconfigure the parkway to accommodate additional safety features, but pressure by the Virginia congressional delegation combined with adverse publicity caused by yet another fatal crash forced parkway officials to agree to erect safety barriers to separate oncoming traffic along substantial stretches of the parkway from National Airport north to the Capital Beltway. The plan supported by the AAA and local representatives James P. Moran, Jr. (D-Va.) and Frank R. Wolf (R-Va.) gave the National Park Service until Labor Day to construct two-foot-high barriers wherever the median narrows to less than fifteen feet wide. In order to accommodate this schedule, the park service was forced to employ conventional "w-beam" guardrails, which were made of quick-weathering Cor-Tan steel in an attempt to reduce their visual impact. Between National Airport and the I-395 Bridge, electric conduits lying underneath the medium forced the park service to employ concrete jersey barriers associated with conventional expressways and highway construction projects. Parkway superintendent Calhoun expressed a desire to replace these "temporary" measures with permanent concrete barriers faced with traditional stone masonry. Steel-backed timber guardrails are also under consideration, as are various combinations of the two configurations. Any attempt to improve the visual appearance of the mandatory barriers will be enormously expensive. The cost of the temporary solution itself was estimated at \$2.15 million, which the park service and the Federal Highway Administration insisted already exceeded the amount of funds available for Washington-area parkway improvements.⁴⁰⁷

The Washington Post greeted the proposal to erect jersey barriers and steel guardrails down the middle of George Washington Memorial Parkway with an irate editorial praising the parkway's scenic beauty and chastising the decision to spend \$2 million "defacing a local and national treasure simply to make it easier for people to drive the parkway at speeds it was never meant to accommodate." The Post argued that the best solution was for the police to do a better job of monitoring drivers, either through increased patrols or more high-tech measures such as automatic monitors coupled to security cameras. Several letters-to-the-editor similarly suggested that it was unfair to destroy the parkway experience enjoyed by millions of motorists simply because of a few accidents caused by reckless drivers. The Post's editorial sang the parkway's praises with a zeal that echoed its enthusiastic endorsement of the newly completed memorial highway sixty-five years earlier. Asserting that the parkway was "one of the most

⁴⁰⁶ Alice Reid, "When Charm, Safety Collide," Washington Post, 22 April 1996; Reid, "A Circle Tour of Frustration," Washington Post, 5 May 1996; Eric Lipton, "GW Parkway Wreck Leaves Two Dead: Accident Closes Road for Hours, Spurs Renewed Safety Concerns," Washington Post, 23 February 1997.

⁴⁰⁷ Peter Finn, "Parkway Barriers Could Be in Place by Labor Day," Washington Post, 26 February 1997.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page 192)

beautiful stretches of road anywhere in the world," the Post observed that the roadway was designed for leisurely traffic amid attractive park surroundings. The newspaper suggested that the parkway should be preserved not just for its intrinsic beauty, but for its historical interest as a reminder of "a gentler age of the automobile." Quoting its architectural critic Benjamin Forgey, the newspaper asserted "parkways represent an ideal that should not be surrendered lightly. This is nothing more, nor less, than the simple dictum: Highways can be beautiful."⁴⁰⁸

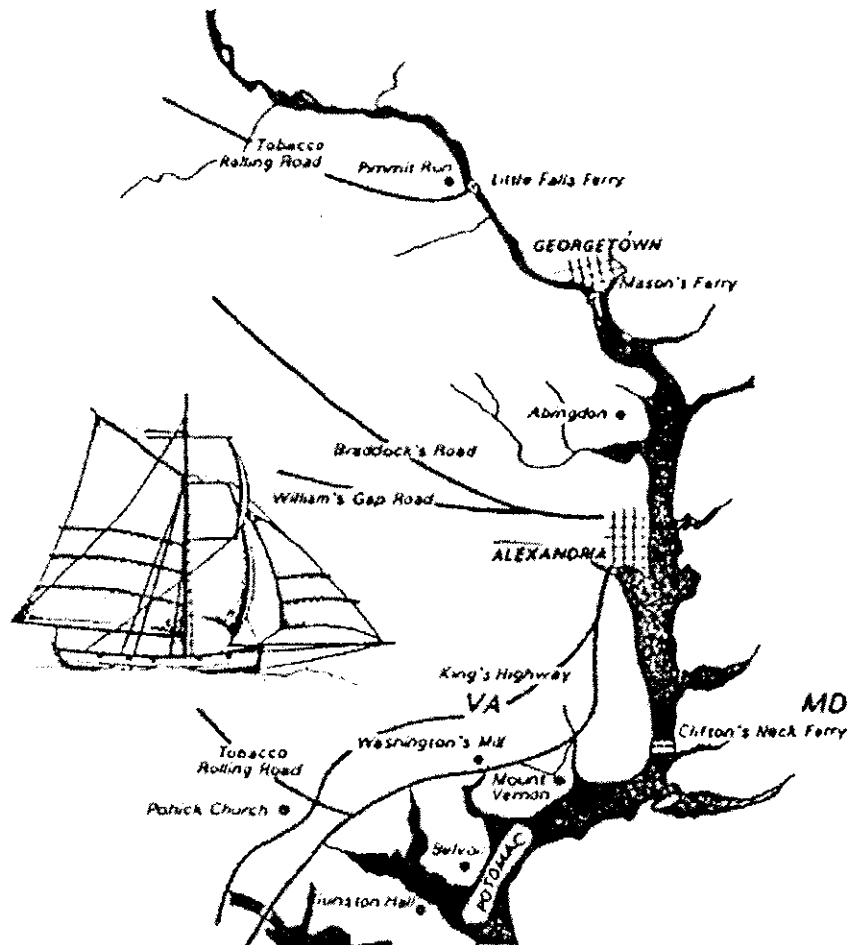
⁴⁰⁸ "Death on the Parkway (Cont'd)," [editorial] Washington Post, 28 February 1997; "The GW Parkway, Not the Indy 500," [letters to the editor], Washington Post 10 March 1997.

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 193)

ILLUSTRATIONS



During the colonial and early federal periods, the Potomac River provided the easiest and most efficient means of transportation. Small sailboats, barges, and large ocean-going vessels plied the Potomac, delivering goods and picking up tobacco at plantation wharves and growing port cities like Georgetown and Alexandria. A rough, unimproved road known as the King's Highway stretched from Fredericksburg to Alexandria, keeping well inland from the Potomac to avoid crossing its marshes and estuaries. The opening of the Occoquan ferry in 1691 created a more easterly route that passed closer to Mount Vernon. By the late eighteenth century, two primitive trade roads linked Alexandria with the Shenandoah valley.

Figure 1 Early transportation routes in Mount Vernon region, ca. 1795 (adapted from HAER drawing No. VA-69-4 by Anna Marconi-Betka, 1994)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 195)

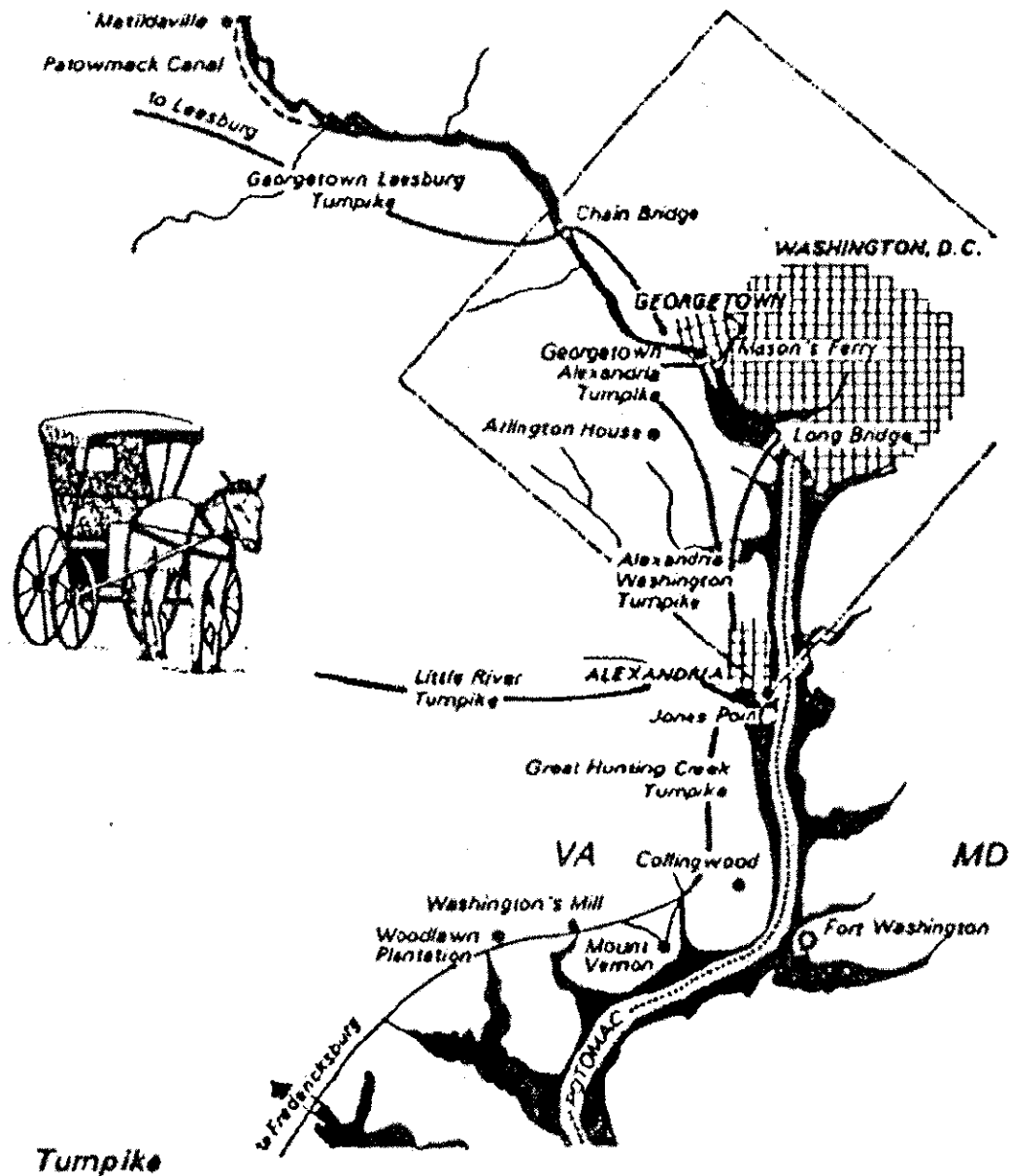


Figure 2 Major transportation routes in Mount Vernon region, ca. 1820 (adapted from HAER drawing No. VA-69-4 by Anna Marconi-Betka, 1994)

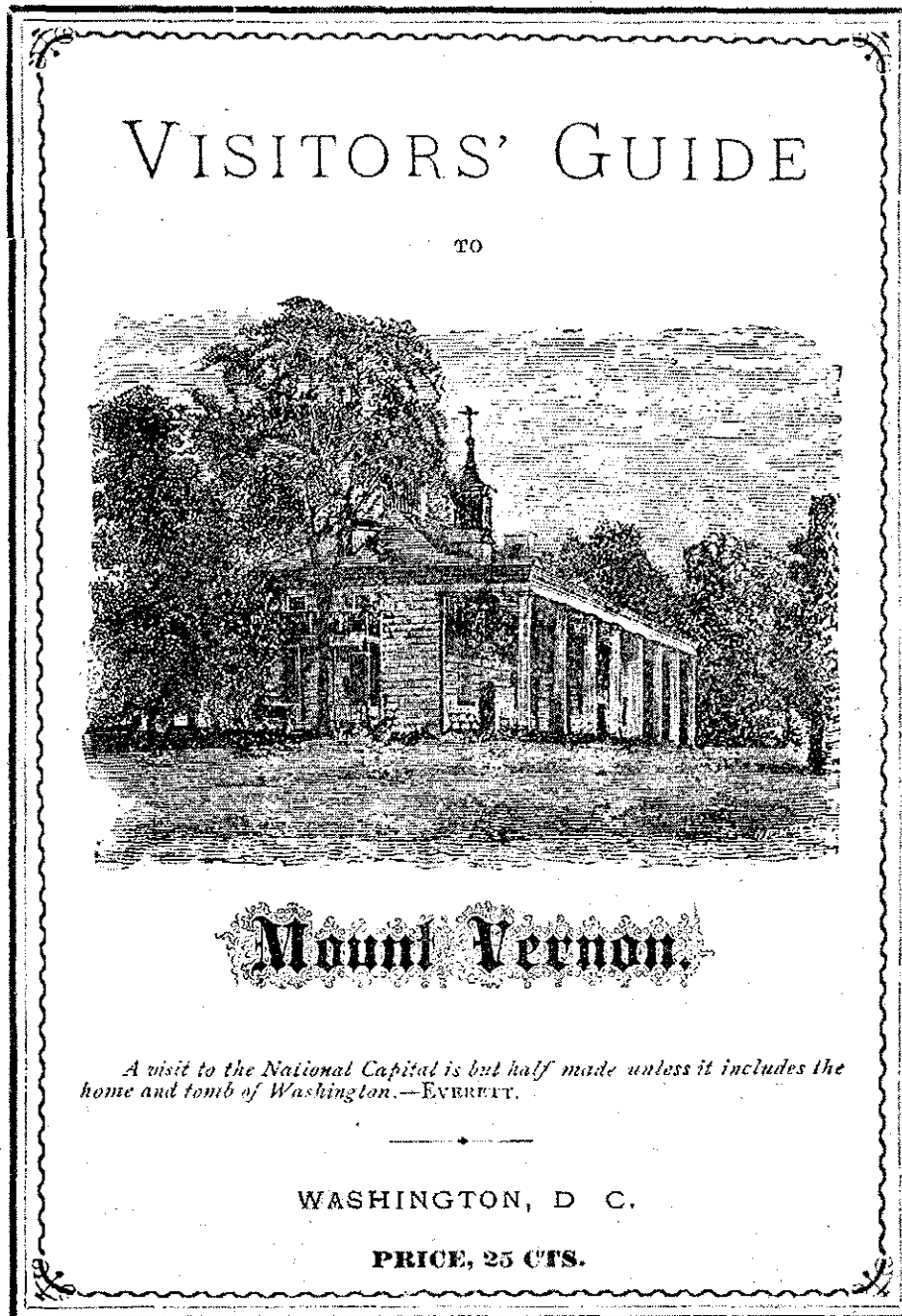


Figure 3 Elizabeth B. Johnston, Visitors' Guide to Mount Vernon
(Washington, D.C.: Gibson Brothers Printers, 1876)

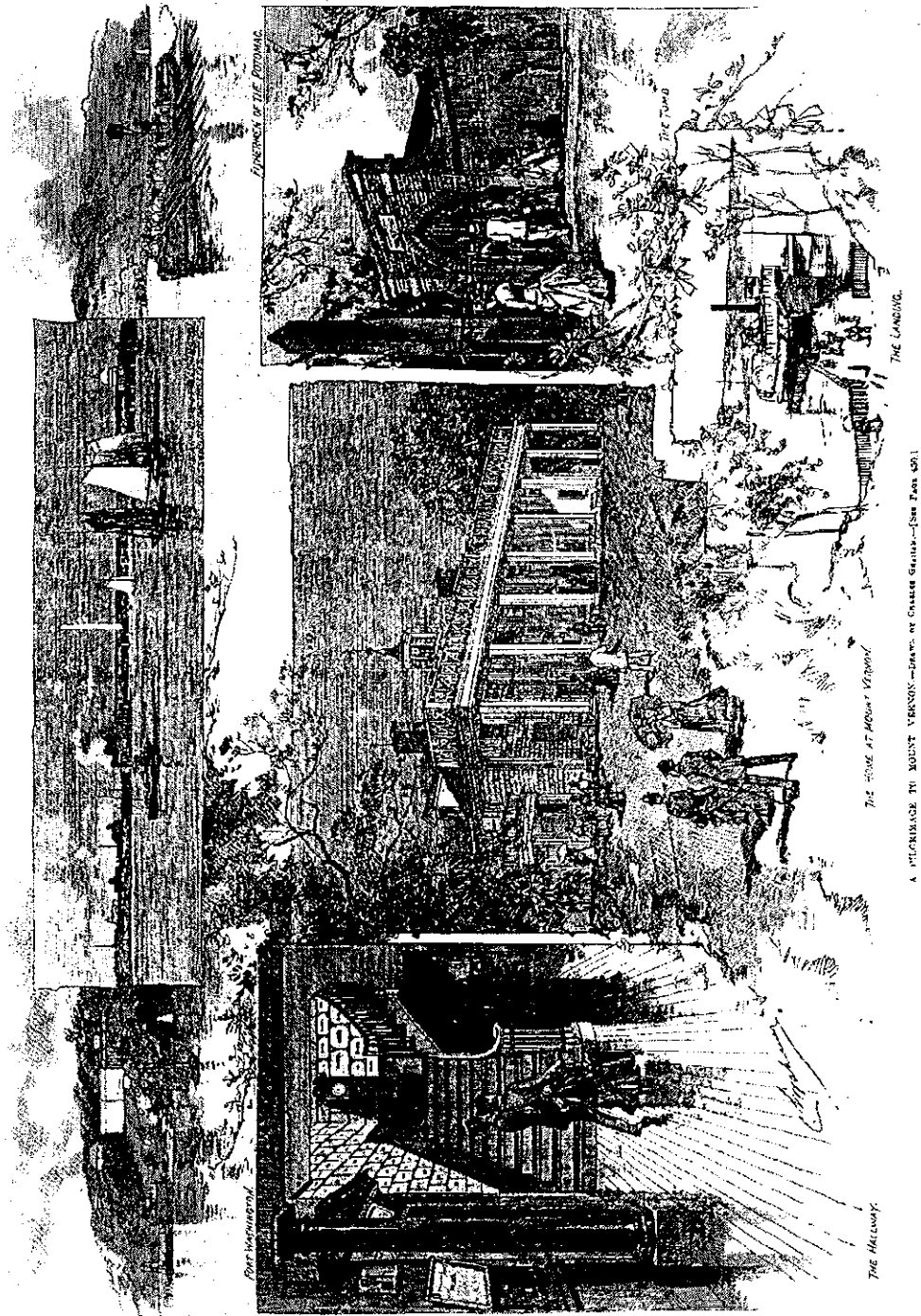


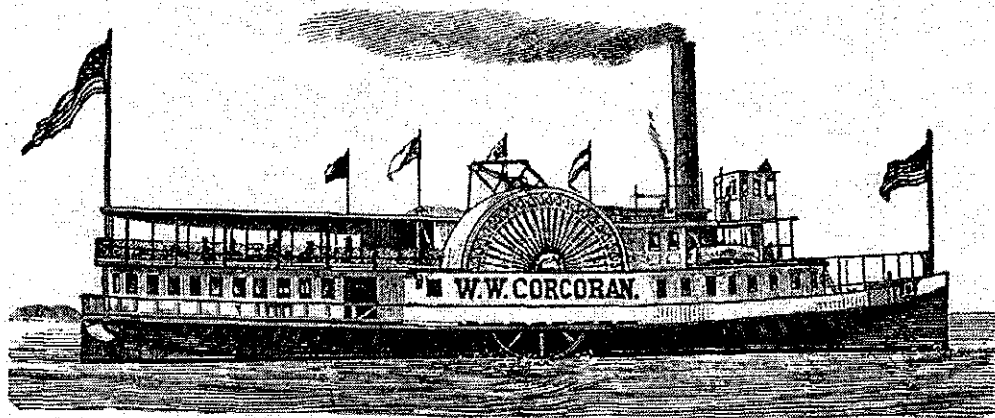
Figure 4 "A Pilgrimage to Mount Vernon," drawn by Charles Graham (Harper's Weekly Magazine, February 28, 1874)

THE STEAMER
W. W. CORCORAN,

Which has been recently built and furnished,

L. L. BLAKE, - - CAPTAIN,

Is the only Boat allowed to land Passengers
at Mount Vernon Wharf.



ROUND-TRIP ONE DOLLAR,

Including admission to Mansion and Grounds.

STEAMER leaves Seventh-Street Wharf DAILY (Sundays excepted) at 10 a. m., and returns about 3 p. m.

J. McH. HOLLINGSWORTH,

Sup't Ladies' Mount Vernon Association.

L. L. BLAKE,
Captain W. W. Corcoran.

Figure 5 Advertisement for steamship *W. W. Corcoran* (Johnston, Visitors' Guide to Mount Vernon)



Figure 6 "Mount Vernon, 1874," drawn by Theo. R. Davis (Harper's Weekly, February 28, 1874)

HARPER'S NEW MONTHLY MAGAZINE.

No. CVI.—MARCH, 1859.—VOL. XVIII.



THE LANDING-PLACE, MOUNT VERNON.

MOUNT VERNON AS IT IS.

OCTOBER in Virginia is a most delicious season. The first mellow tints of autumn then

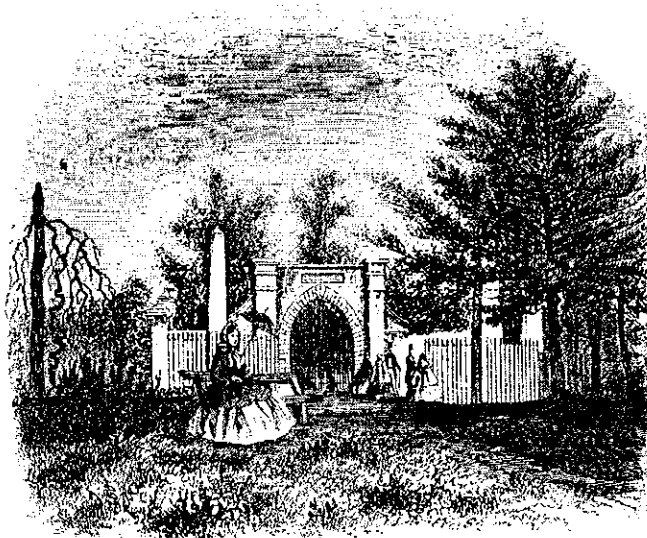
requiem of Nature over all her beautiful children, as she then begins to disrobe them for the tomb. It was on one of these beautiful

Figure 7

"The Landing Place, Mount Vernon," (Benson Lossing, "Mount Vernon As It Is," Harper's New Monthly Magazine 18 [March 1859])

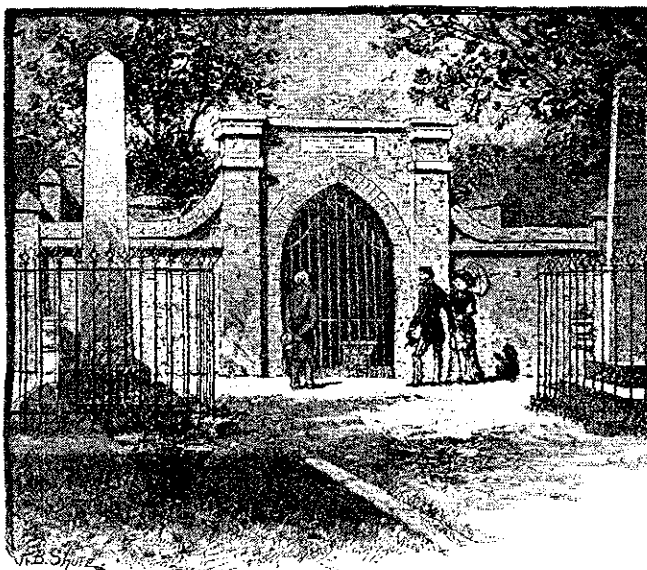


Figure 8 Mount Vernon steamboat landing as renovated ca. 1895 (vintage postcard: author)



THE TOMB OF WASHINGTON.

Figure 9 "The Tomb of Washington,"
(Lossing, "Mount Vernon As It
Is")



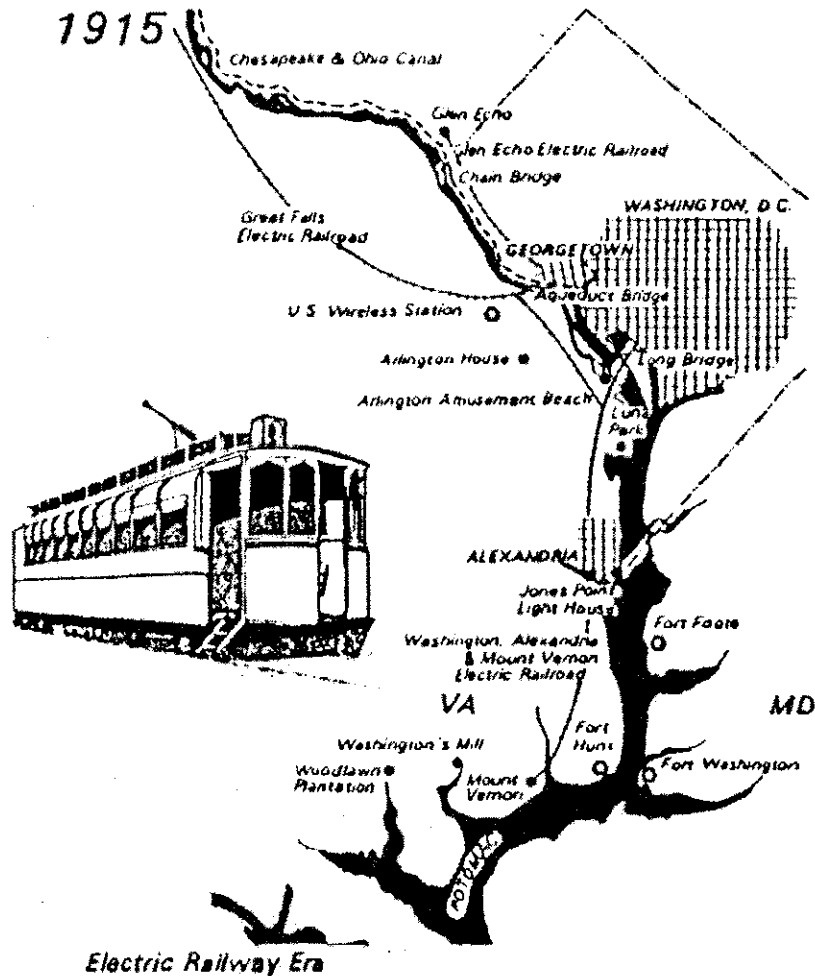
THE TOMB OF WASHINGTON, MOUNT VERNON.

Figure 10 "The Tomb of Washington, Mount
Vernon," (Joseph West Moore,
Picturesque Washington: Pen and
Pencil Sketches [Providence, Rhode
Island: J.A. & R.A. Reid, 1888])



THE EASTERN PORTICO,
MOUNT VERNON.

Figure 11 "The Eastern Portico, Mount Vernon," (Moore, Picturesque Washington)



Electric Railway Era

The construction of an electric railway line from Alexandria to Mount Vernon in 1892 dramatically increased the number of visitors and helped initiate the transformation of northern Virginia into a suburb of Washington. The trolley line was extended from Alexandria to Washington in 1896. The electric railway's lower cost and frequent service helped democratize the Mount Vernon tourist experience by offering access to a broader segment of the American public. Electric railways soon extended north of the city to Great Falls and Glen Echo, and several amusement parks were built along the trolley lines. Local citizens also used the electric railroad to commute to work and to seek out picnic areas along the Potomac shoreline.

Figure 12 Electric railway routes from Washington to Mount Vernon and Great Falls (adapted from HAER drawing No. VA-69-4 by Anna Marconi-Betka, 1994)



Figure 13 Tourists at Great Falls, ca. 1900 (vintage postcard: author)



"MIDDLE FALLS," AT GREAT FALLS OF THE POTOMAC. 15 miles from Washington, D. C. on Washington and Old Dominion Railway.---(306)

Figure 14 Great Falls postcard promoting Washington and Old Dominion electric railway, ca. 1915 (vintage postcard: author)

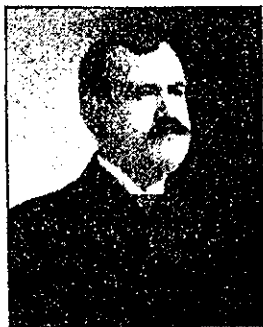


Figure 15 Illustrated cover of A.J. Wedderburn's Mt. Vernon Avenue (Washington, D.C.: The Art Publishing Company, 1913)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 207)



WM. B. SMOOT,
First Vice-President.



JOHN B. SMOOT,
First President.



M. B. HARLOW,
Sec. & Treas. Originator of Plan.



HON. FRANK HUME,
Late Vice-President.



GEN. PETER C. HAINS, U. S. A.,
Surveyor of Mt. Vernon Avenue.



E. E. DOWNHAM,
Second Vice-President.

Figure 16 Illustrated cover of A.J. Wedderburn's Mt. Vernon Avenue (Washington, D.C.:
The Art Publishing Company, 1913)

ALEXANDRIA.



CHRIST CHURCH, ALEXANDRIA.

THERE is more at Alexandria to call up the memory of Washington than any other place in the world, except Mt. Vernon. Alexandria was Washington's own town. It was his market-place, his post-office, and his voting place. It was the

meeting-place of the lodge of Free-Masons to which he belonged. He was a member of its Corporation Council, and owned property within its limits. He was the commander of its local militia, and was a member of its volunteer fire company. He slept in the

Figure 17 "Christ Church, Alexandria" (Reavis, Mt. Vernon Avenue)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 209)

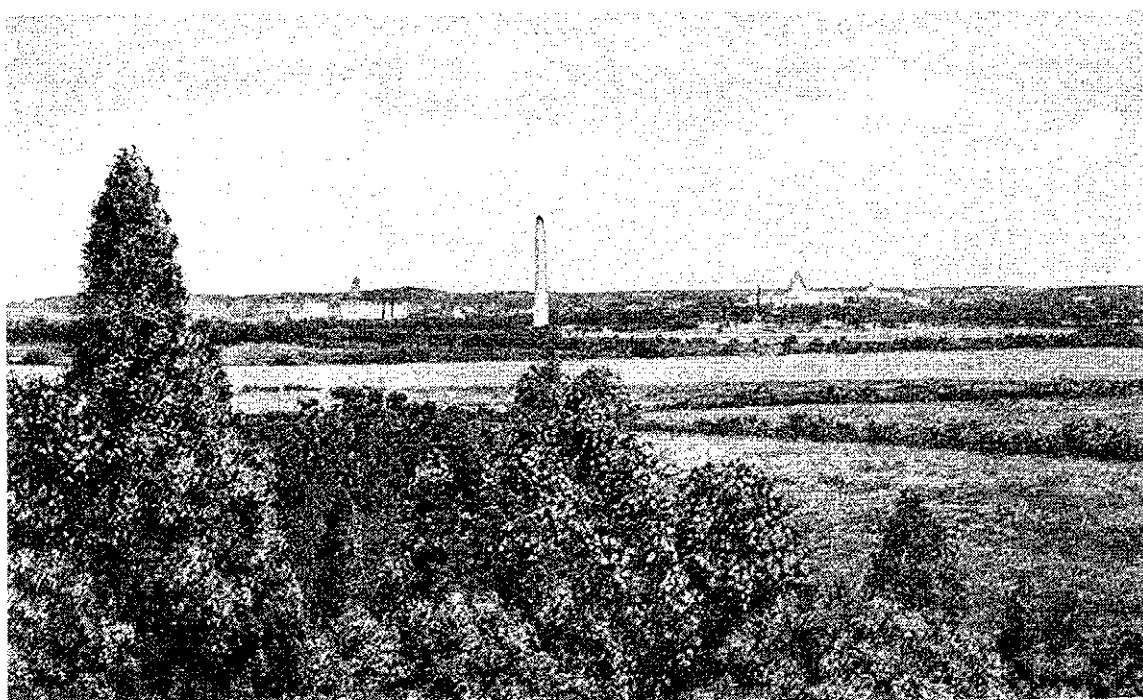


Figure 18 Views from ridge above Arlington (vintage postcards: author)

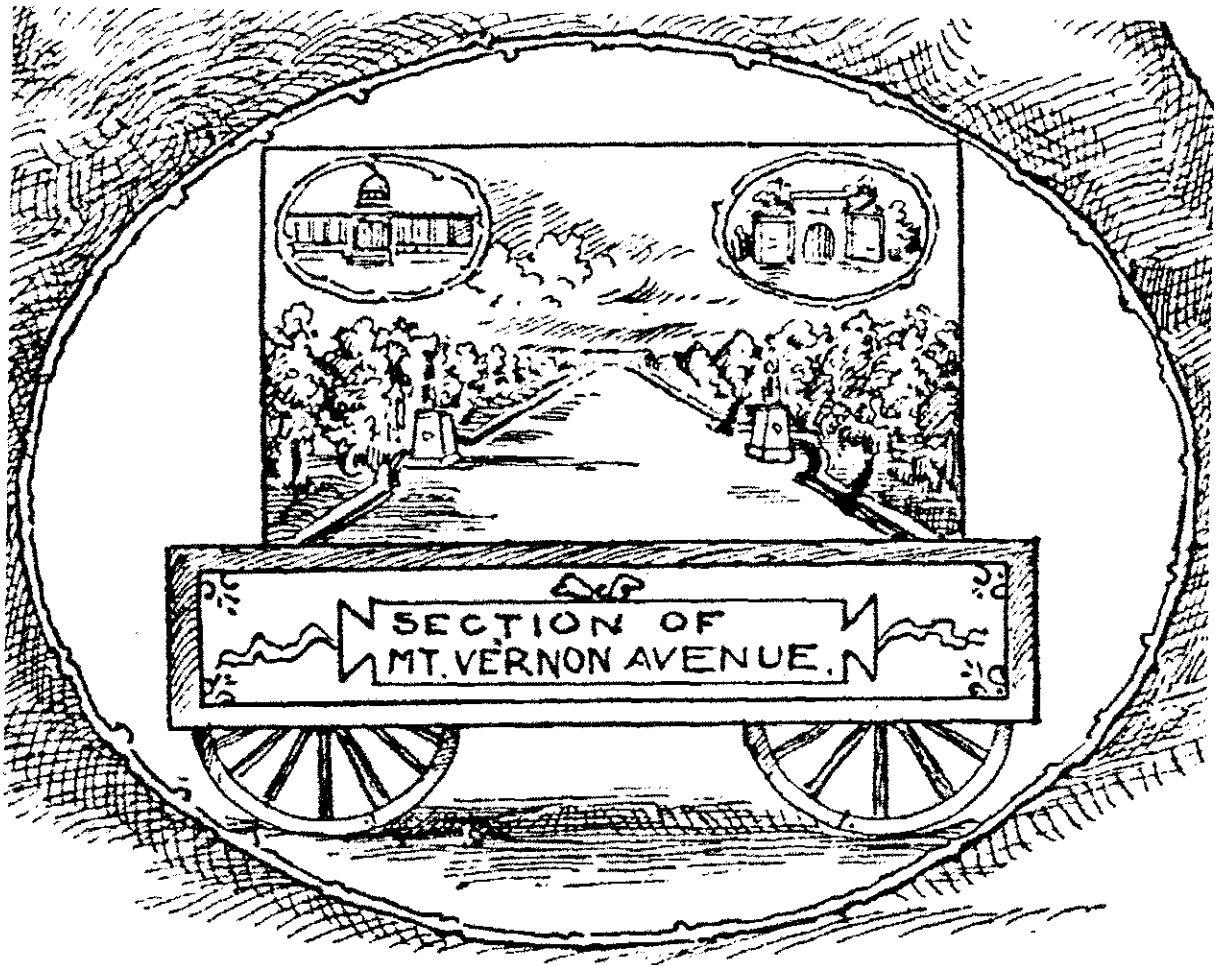


Figure 19 Proposal for Mount Vernon Avenue (A.J. Wedderburn, Souvenir Sesquicentennial of Alexandria, Va [Washington, D. C.: National Engraving Company, 1899])

1890

In 1890, the U.S. Army Corps of Engineers examined three possible routes for a National Road from Washington to Mount Vernon via the Aqueduct Bridge. The Mount Vernon Avenue Association preferred the middle route because it had many historical associations and provided the most extensive views of Washington and the Potomac River valley. The Senate Park Commission endorsed this route in 1902.

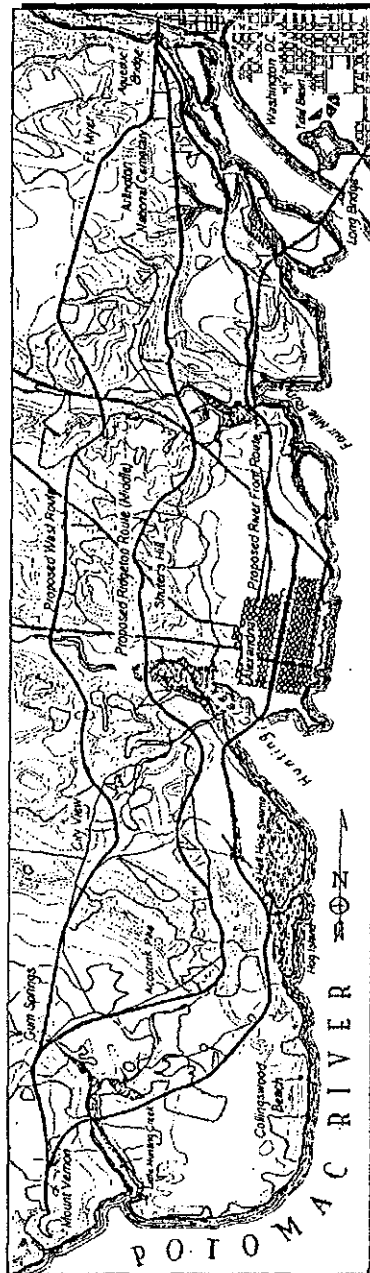


Figure 20 Alternative alignments for Mount Vernon Avenue, as suggested in report of Lieut. Col. Peter Hains, U.S. Army Corps of Engineers, 1890 (from HAER drawing No. VA-69-5 by Robert Dawson and Ed Lupyak, 1994)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 212)

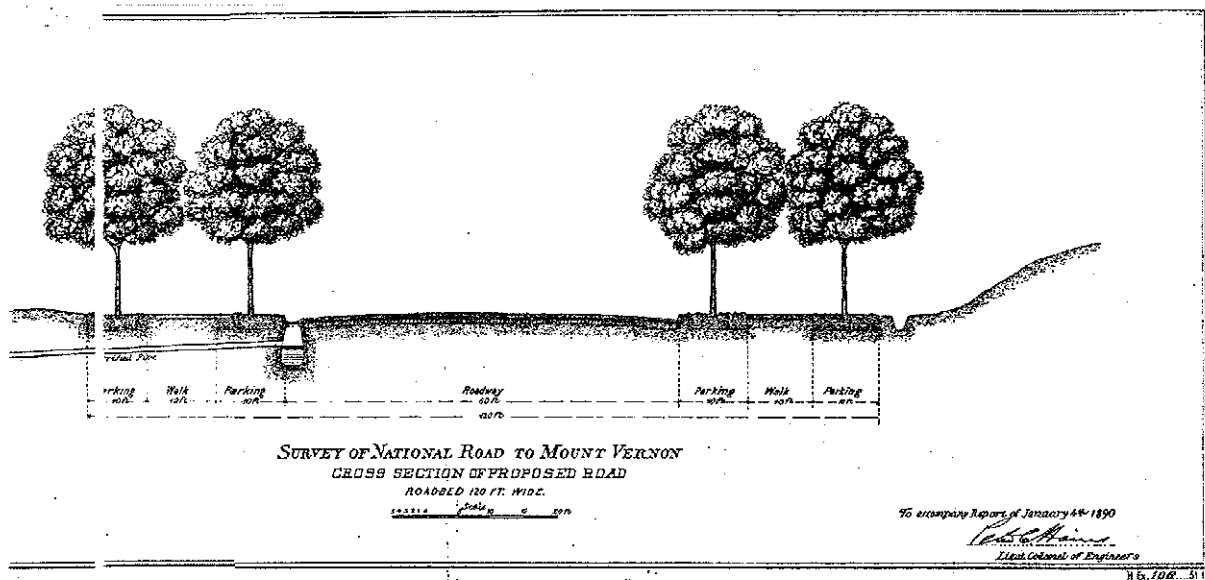
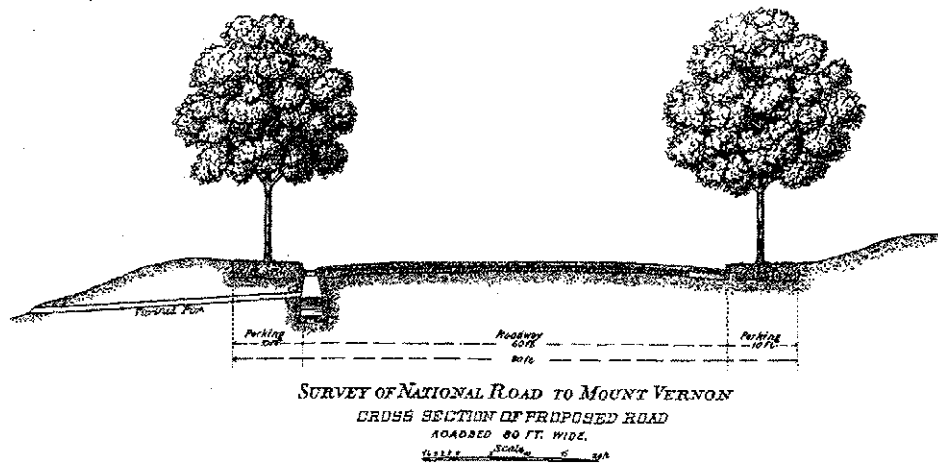


Figure 21 Proposed sections for Mount Vernon Avenue, 1890 (U.S. Congress, House, National Road from the Aqueduct bridge to Mount Vernon, Va., report prepared by Lieut. Col. Peter C. Hains, Corps of Engineers, U.S. Army, 51st Cong., 1st Sess., 1890, Executive Doc. No. 106)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 213)

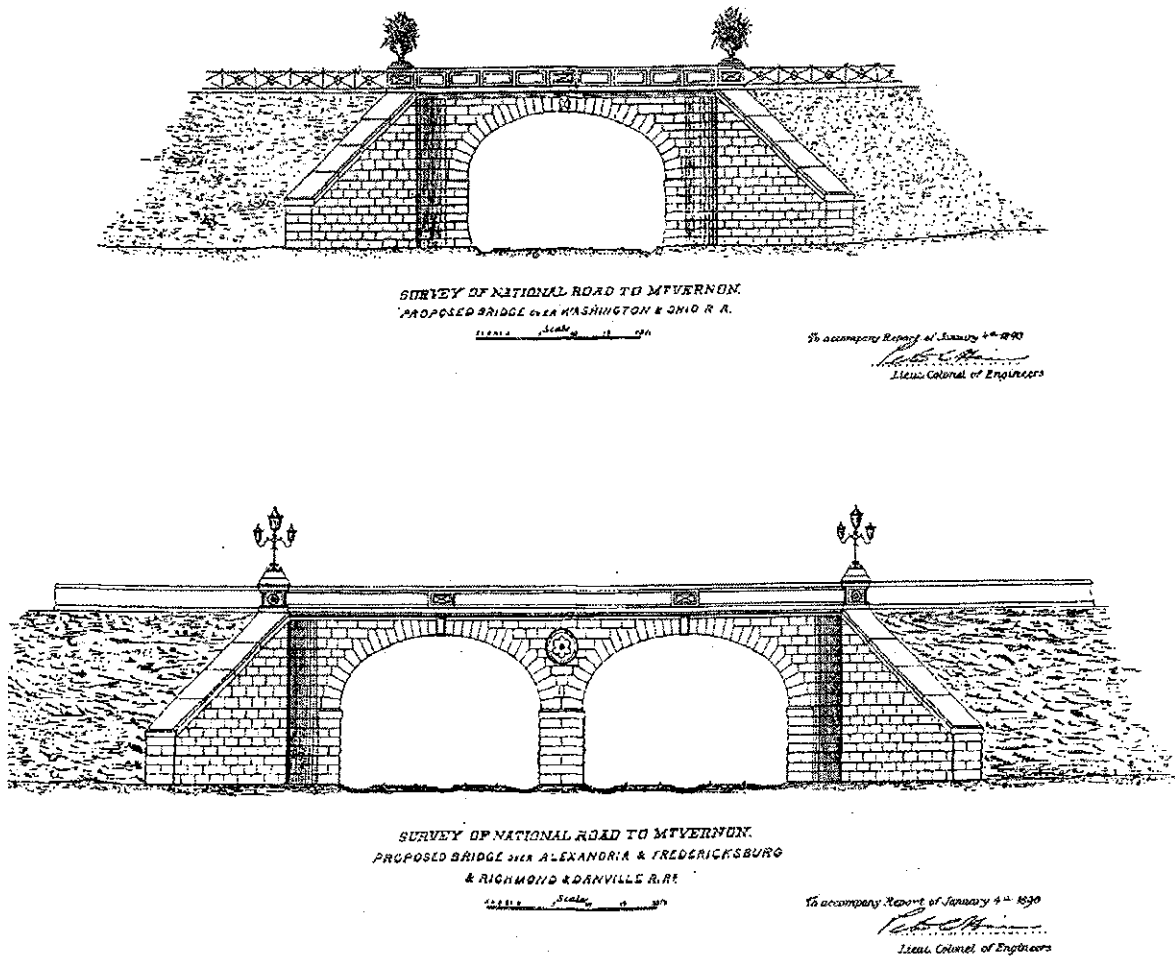
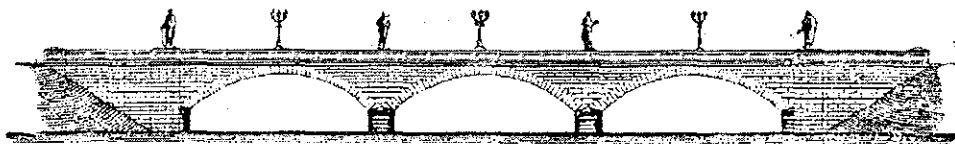


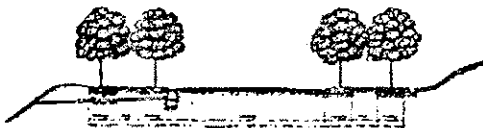
Figure 22 Proposed bridge elevations for Mount Vernon Avenue, 1890 (National Road from the Aqueduct bridge to Mount Vernon, Va.)

MOUNT VERNON AVENUE



Bridge Over Great Hunting Creek Memorial to Lafayette, DeKalb, Rochambeau and Other Foreigners Who Fought in the Revolution.

"In honoring Washington the American people honor them selves."—Leland Stanford, of California.



A Section of the Avenue from Col. Haines' Report.

ORIGIN OF THE IDEA.

Mr. M. B. Harlow, in 1886, then Treasurer of Alexandria, Va., conceived the idea that the people of Virginia and the United States should unite in erecting a tribute to the memory of the founder of this nation, further believing that the most useful, lasting and beneficial memorial which could be built to the memory of Washington, as President, Soldier and Statesman, would be to link the city, which he laid out, with his tomb by a great highway, combining the idea of the Apian Way at Rome and of London's Westminster Abbey; with bridges



Bridge over Railroads, On Mt. Vernon Avenue—Col. Haines' Report.

over the various streams along the route: Memorials to the great foreign soldiers who fought to aid the American revolutionists.

Section for Each State.

The highway, with a section for each State, will be seventeen miles in length with a proposed width of two hundred and fifty feet, which is to be divided into fifty sections, one for each State; thus giving each an area of about one acre on which to build.

Mr. Harlow also suggested that the States should erect

Figure 23 Page from A.J. Wedderburn's Mt. Vernon Avenue (Washington, D.C.: The Art Publishing Company, 1913)

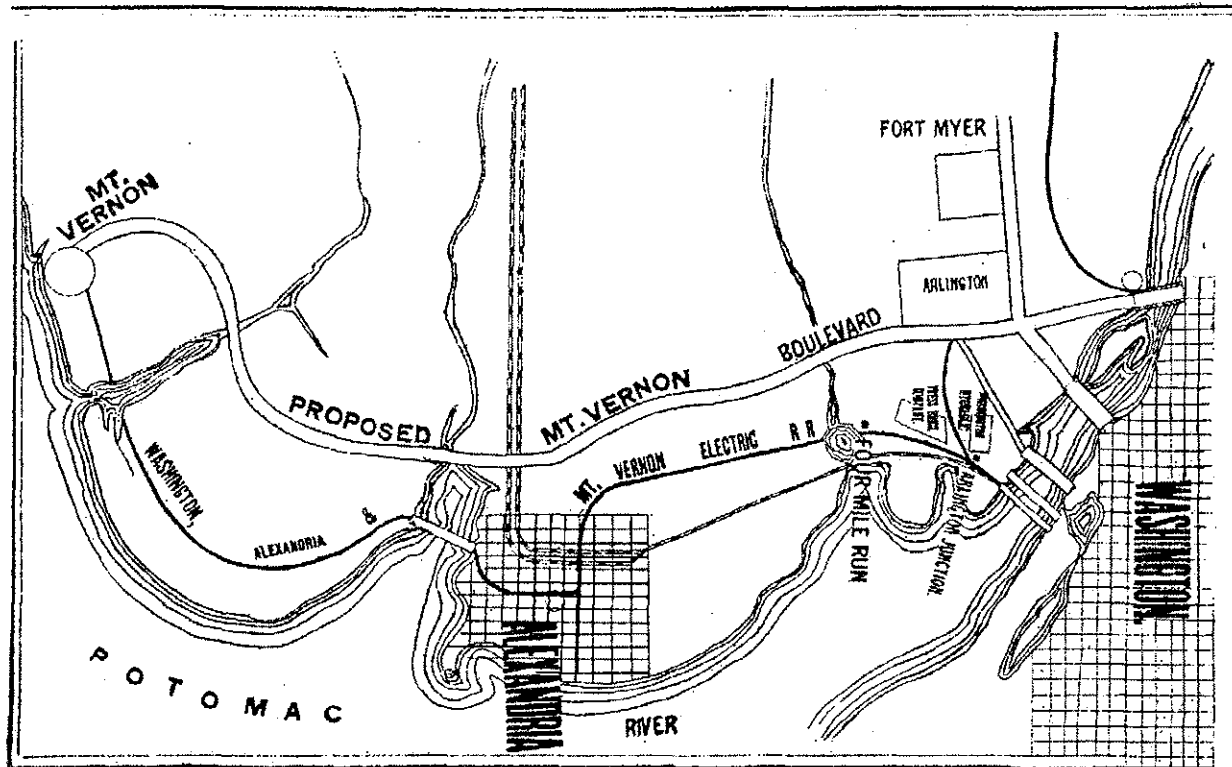
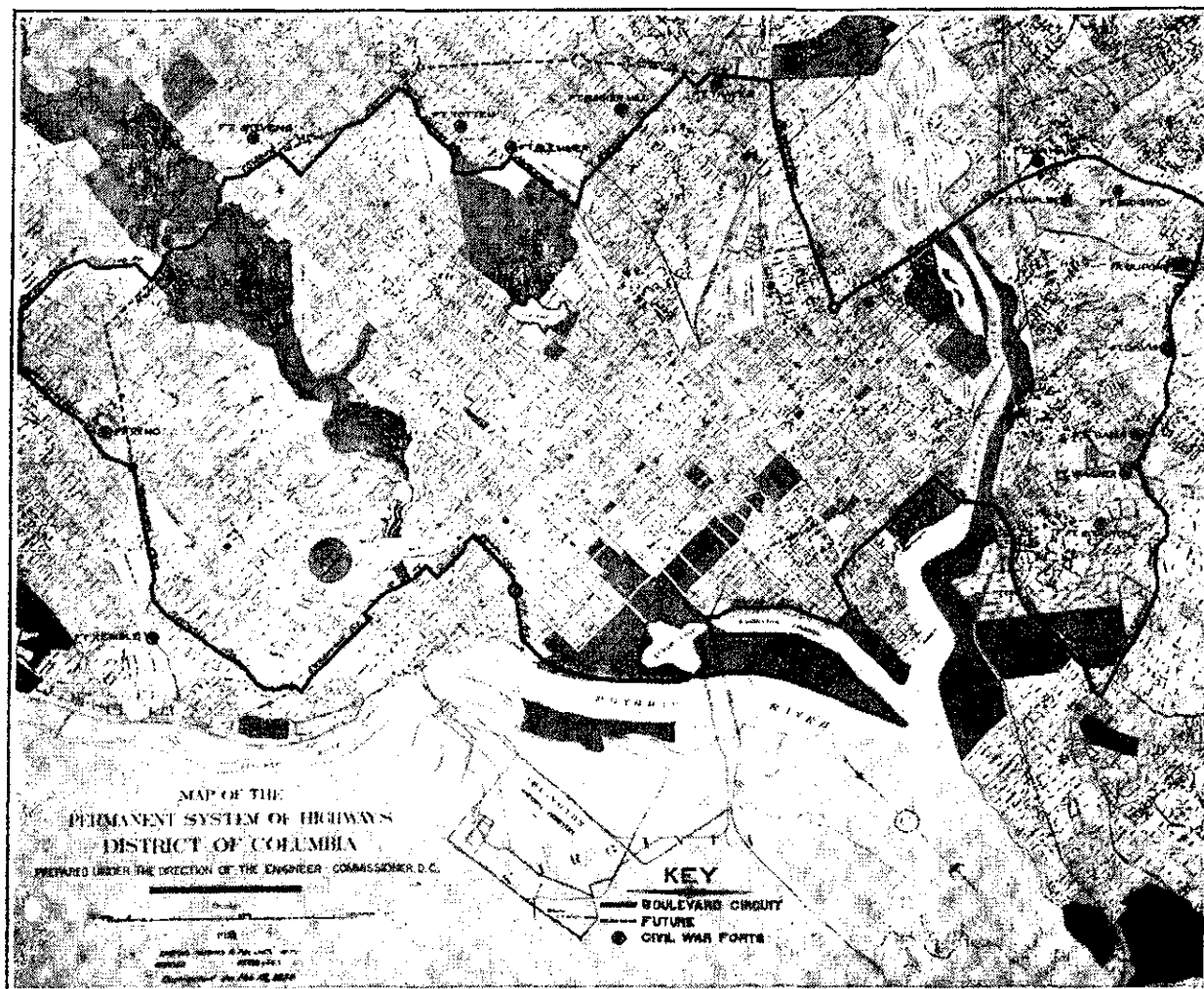


Figure 24 Proposed route of Mount Vernon Avenue, ca. 1913 (Wedderburn, Mount Vernon Avenue)



Parks and park connections within the District of Columbia, as proposed in the plan of 1901

Figure 27 Park and parkway system of Washington, D.C., as proposed by the 1901 Senate Park Commission (Commission of Fine Arts Tenth Report, July 1, 1921-December 31, 1925 [Washington, D.C.: Government Printing Office, 1926])

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 217)



No. 13.—Typical section of one of the Valley Parkways, such as Piney Branch, Soapstone Creek, and Georgetown Parkways.



No. 17.—Section of Savannah Parkway.



No. 11.—Typical section of Rock Creek Parkway—Treatment recommended.

Figure 26

Senate Park Commission proposals for parkway development,
(The Improvement of the Park System of the District of Columbia)

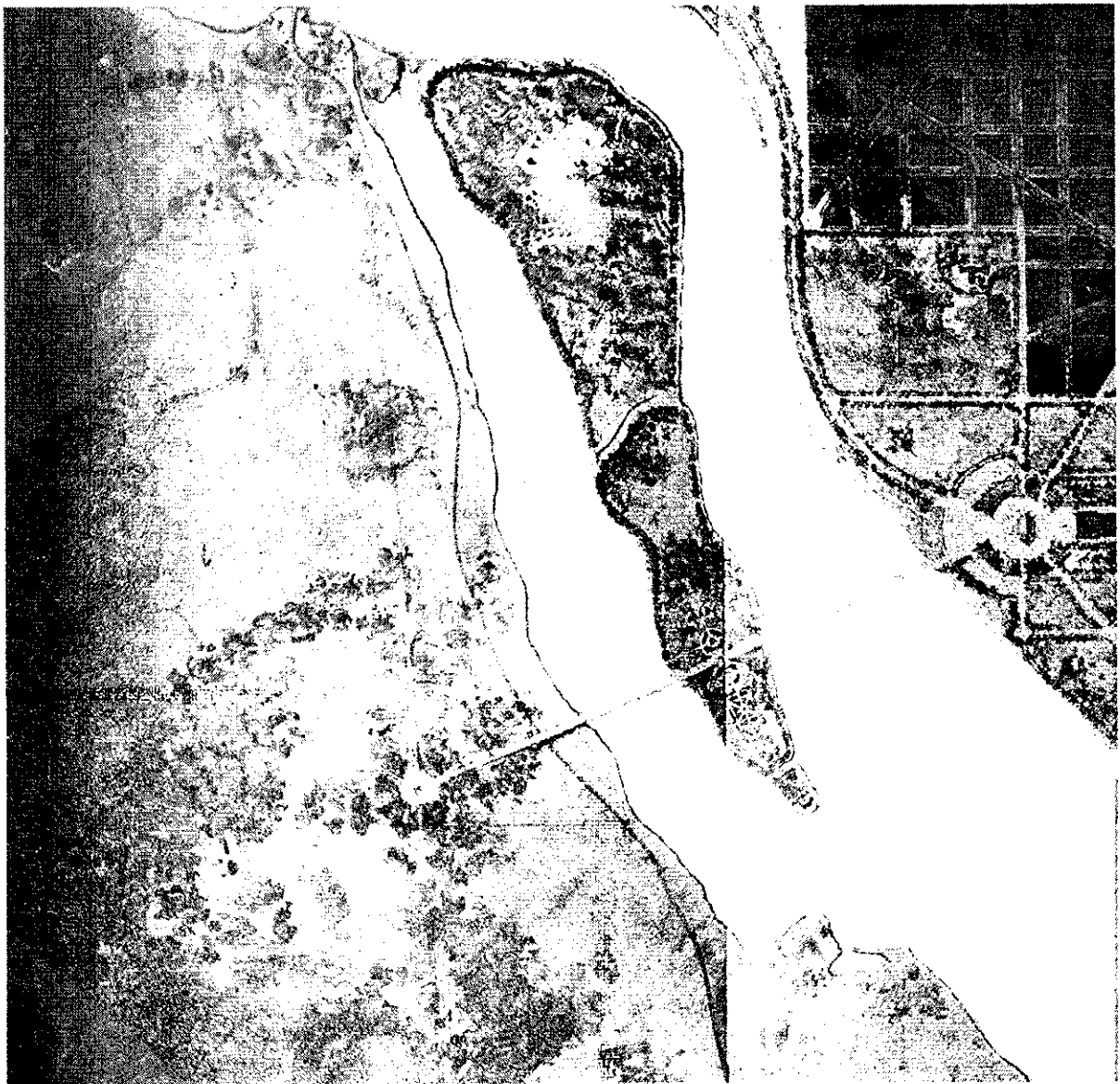


Figure 27 Treatment of area encompassing junction between Mount Vernon Avenue and approach to Arlington Cemetery, as proposed by Senate Park Commission (detail from "General Plan of the Mall System," illustration no. 19 in The Improvement of the Park System of the District of Columbia)



Figure 28 Commonwealth Avenue, Boston, Massachusetts (vintage postcard: author)

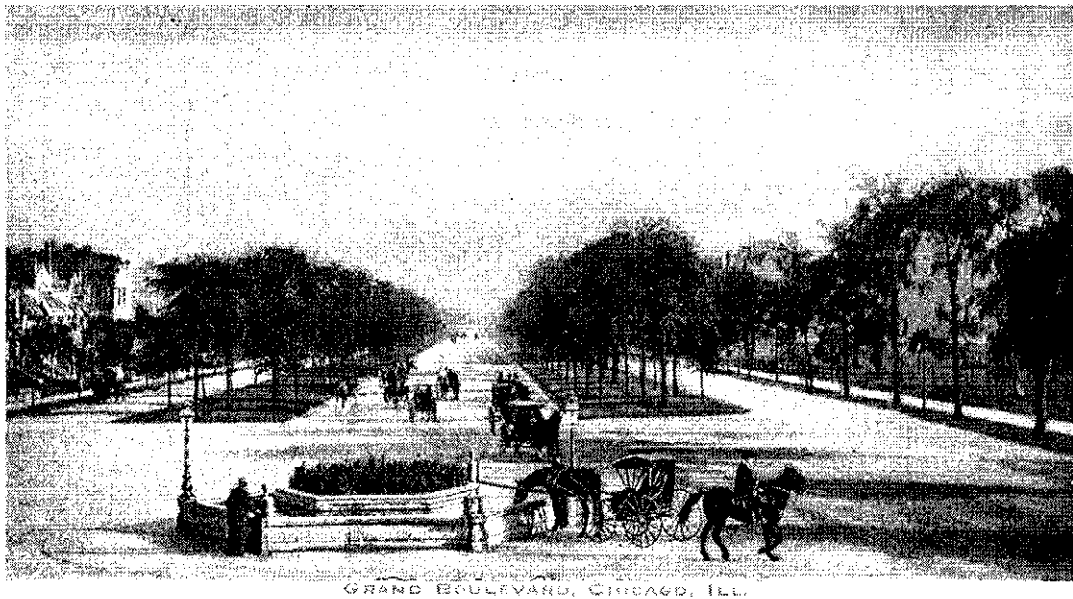


Figure 29 Grand Boulevard, Chicago (vintage postcard: author)

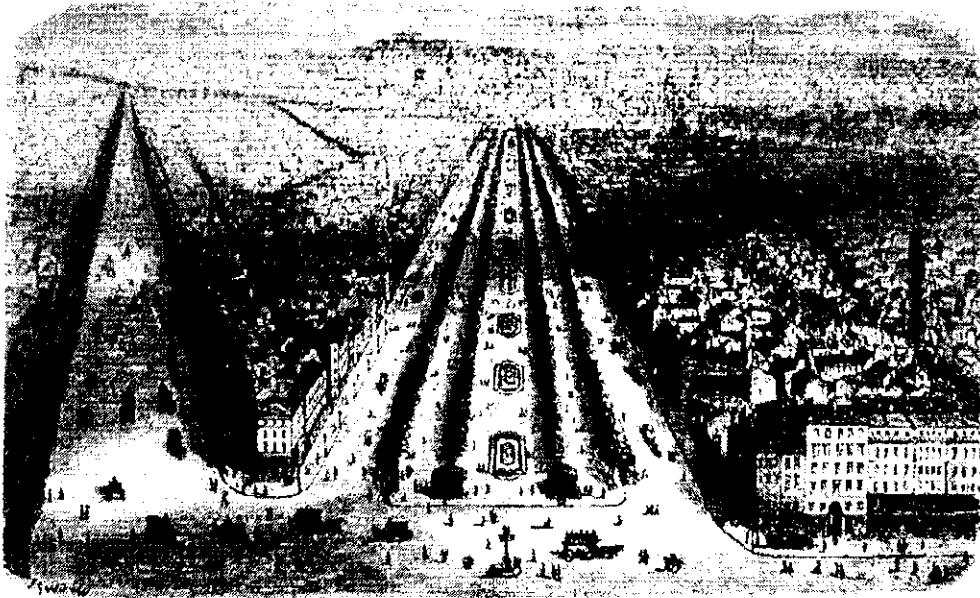


Fig. 347. Vue du Boulevard Richard-Lenoir, prise de la Colonne de la Bastille.

Figure 30 Parisian boulevard (Adolphe Alphand, Les Promenades de Paris [Paris: J. Rothschild, 1867-73])

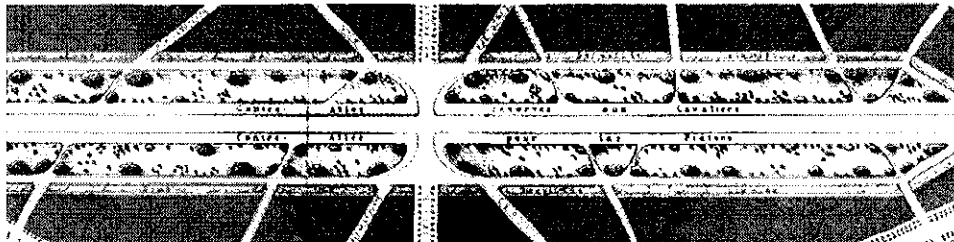
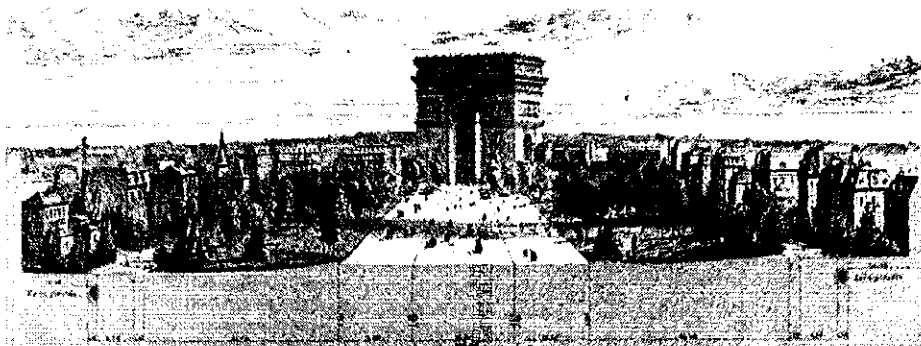


Figure 31 Avenue de l'Imperatrice, Paris (Alphand, Les Promenades de Paris)

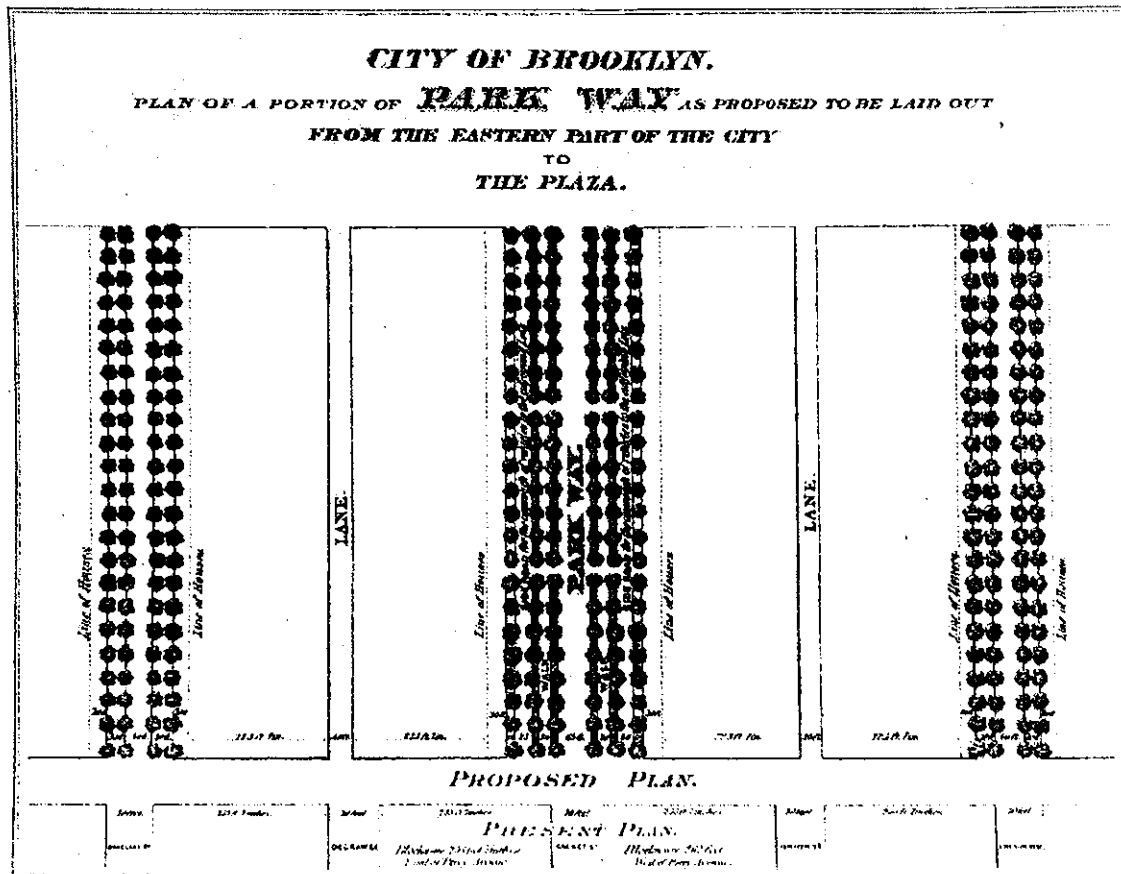


Figure 32 Plan for Eastern Parkway, 1868 (Eighth Annual Report of the Board of Commissioners of Prospect Park, Brooklyn, January 1868 [Brooklyn: I. Van Anden's Print, 1868]).

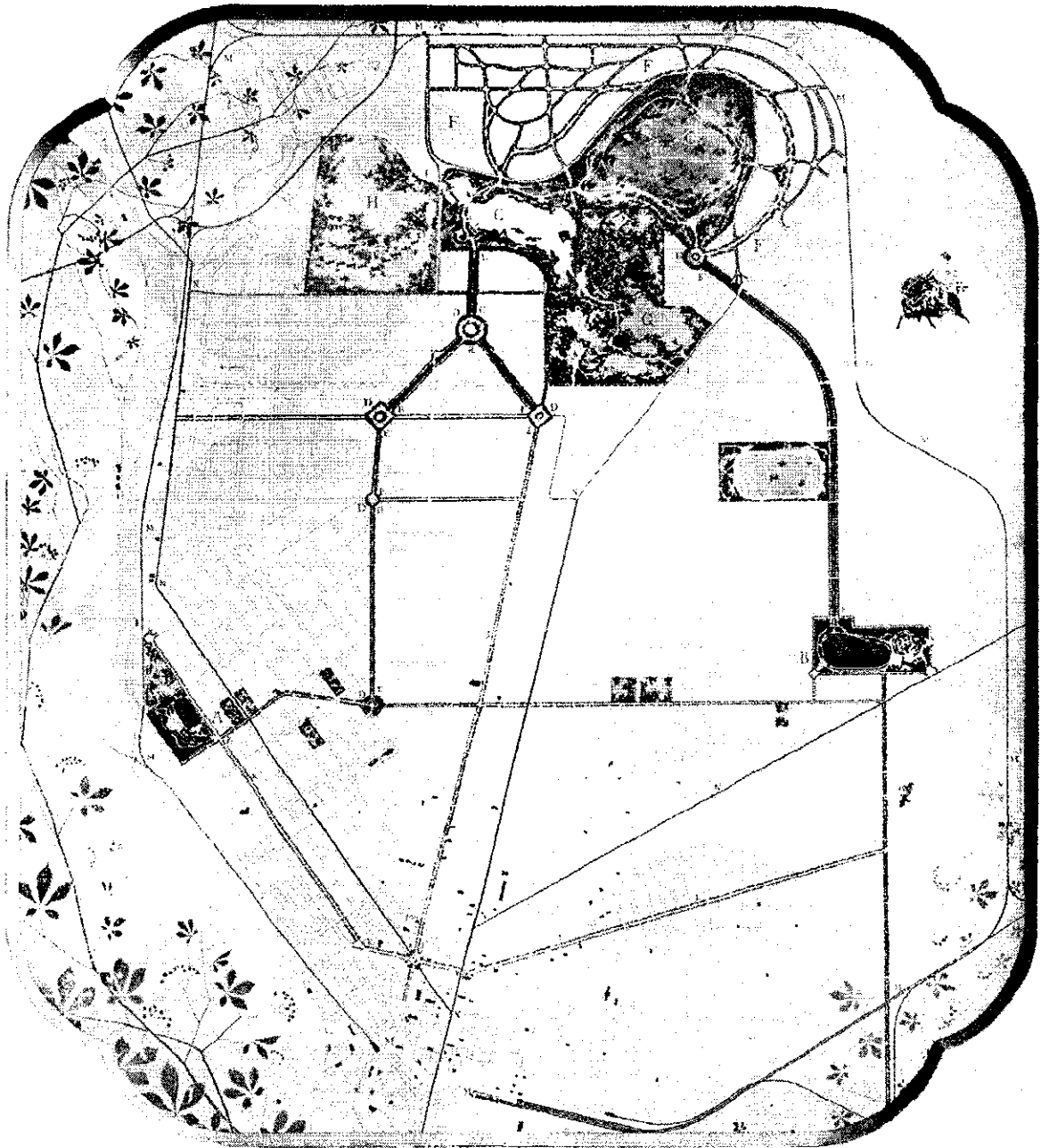


Figure 33 Frederick Law Olmsted, Plan of Buffalo Park and Parkway System, 1876
(courtesy of National Park Service, Frederick Law Olmsted National
Historic Site)

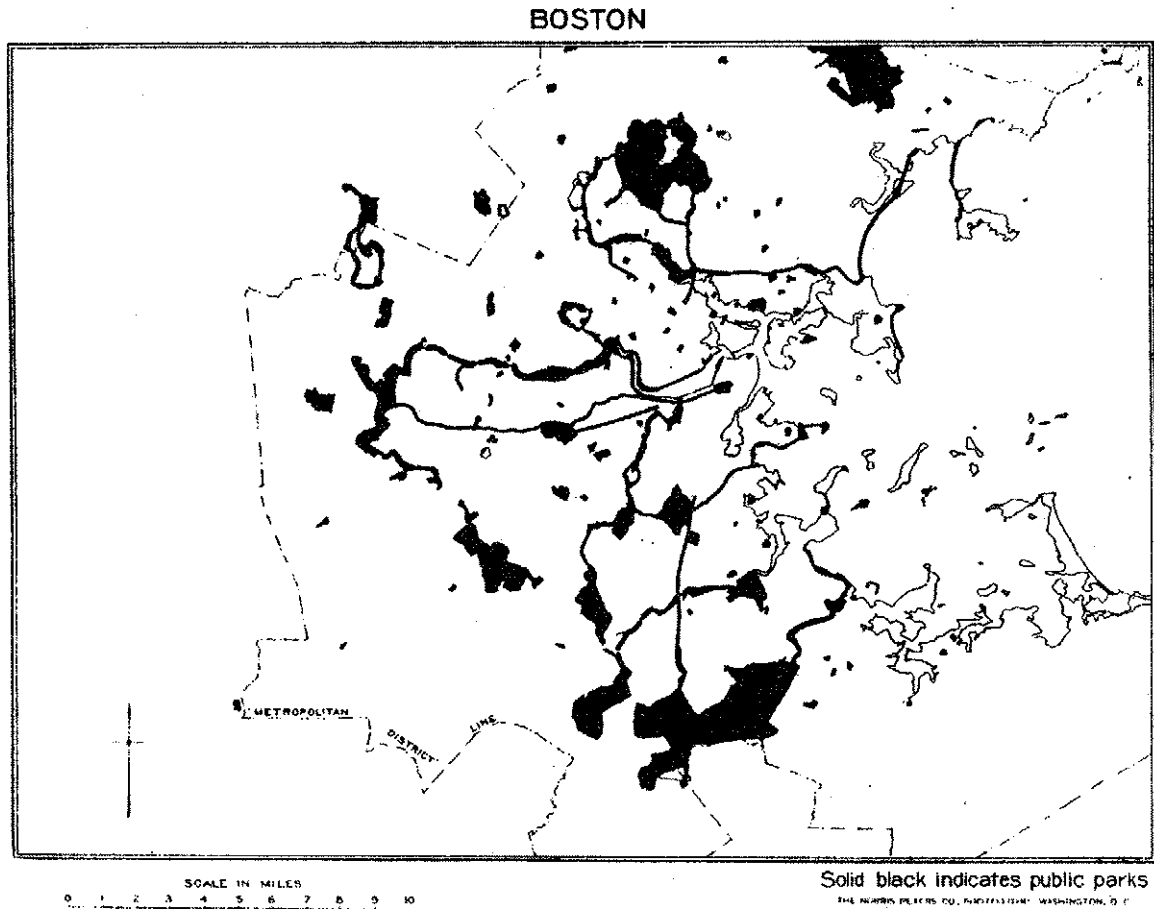


Figure 34 Map of Boston metropolitan park and parkway system, ca. 1900 (U.S. Senate, Committee on the District of Columbia, The Improvement of the Park System of the District of Columbia [Washington: Government Printing Office, 1902])

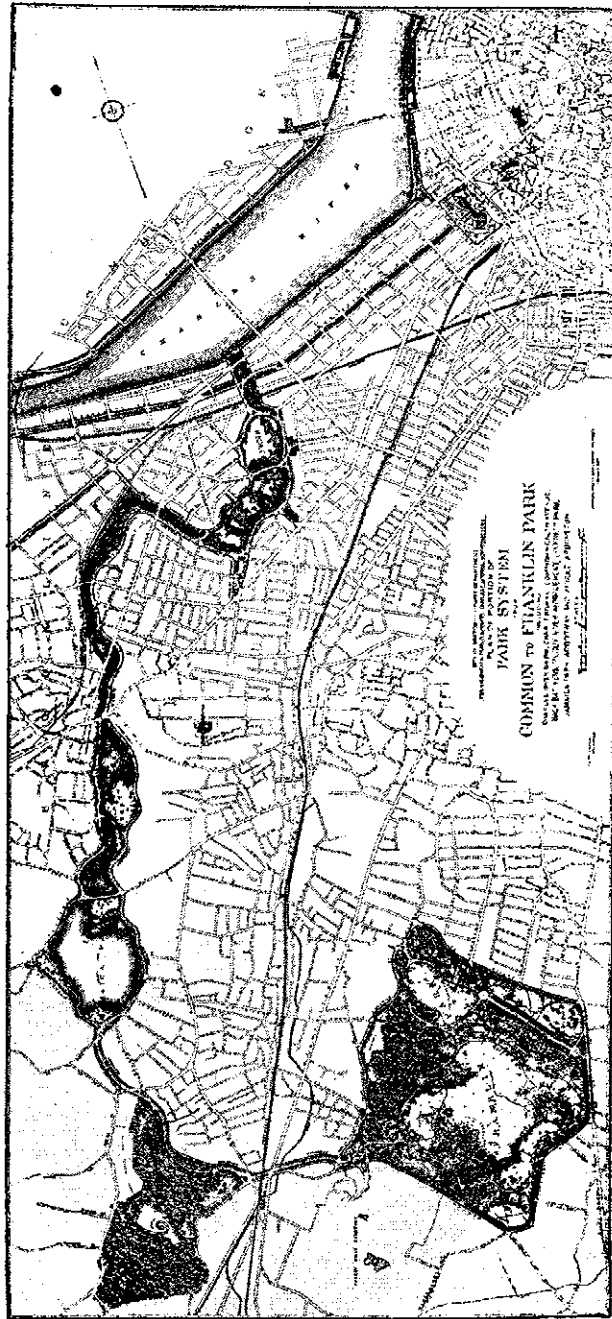


Figure 35 Frederick Law Olmsted, Plan of the Park System from Common to Franklin Park, 1894
(courtesy of National Park Service, Frederick Law Olmsted National Historic Site)

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Figure 36 Plan and sections of Boston parkways (John Nolen and Henry Hubbard, Parkways and Land Values (Cambridge: Harvard University Press. 1937)

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Figure 37A View of Boston's Riverway (vintage photograph in Rock Creek and Potomac Parkway notebook, National Commission of Fine Arts)

SCENE IN FENWAY. SHOWING GARDNER'S "PALACE" BOSTON. MASS.

46



64487

Figure 37B Scene in Fenway (vintage postcard: author)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 227)

1911—East River Drive at Columbia Ave., Fairmount Park, Philadelphia, Pa.



Figure 38 Automobiles on East River Drive, Fairmount Park, Philadelphia (vintage postcard: author)

1036—Grand Drive, Forest Park, St. Louis, Mo.



Figure 39 Automobiles on Grand Drive, Forest Park, St. Louis (vintage postcard: author)



Figure 40 Motorists waiting for permits at Arch Rock Entrance Stations, Yosemite National Park, 1927 (Courtesy of Yosemite Research Library)

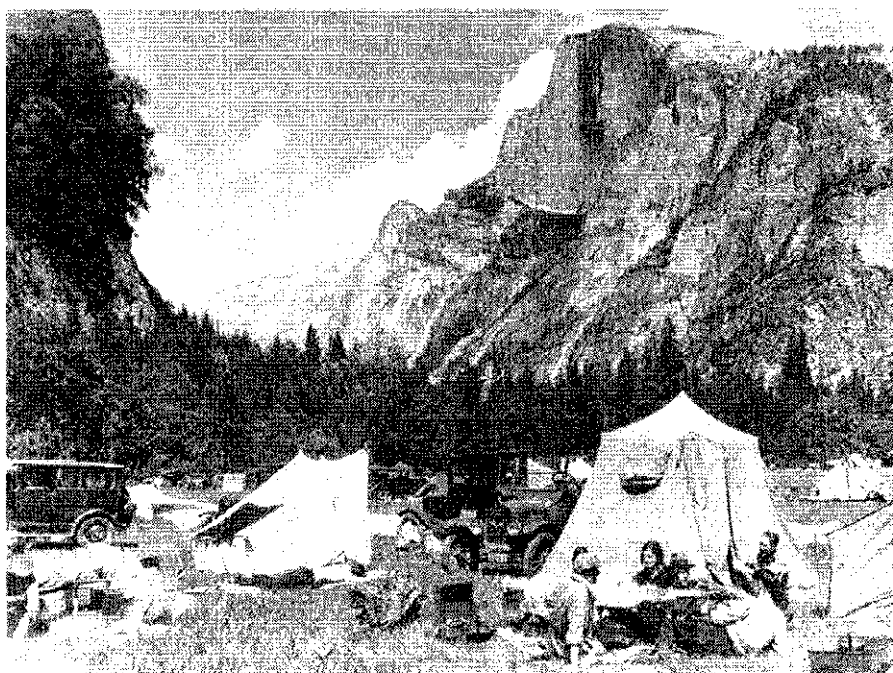


Figure 41 Autocamping in Stoneman Meadows, Yosemite National Park, 1927 (Courtesy of Yosemite Research Library)

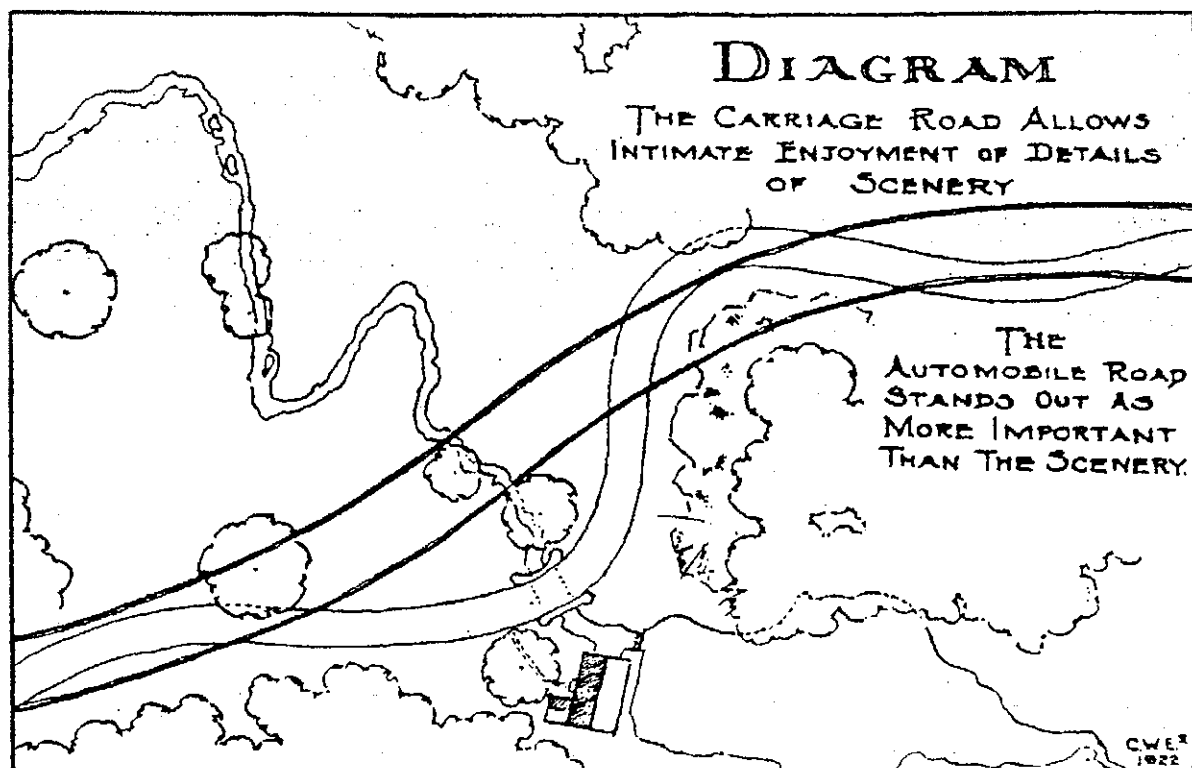


Figure 42 Diagram showing differences between carriage road and motor road (Charles W. Eliot II, "The Influence of the Automobile on the Design of Park Roads," Landscape Architecture 13 [October 1922])

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 230)

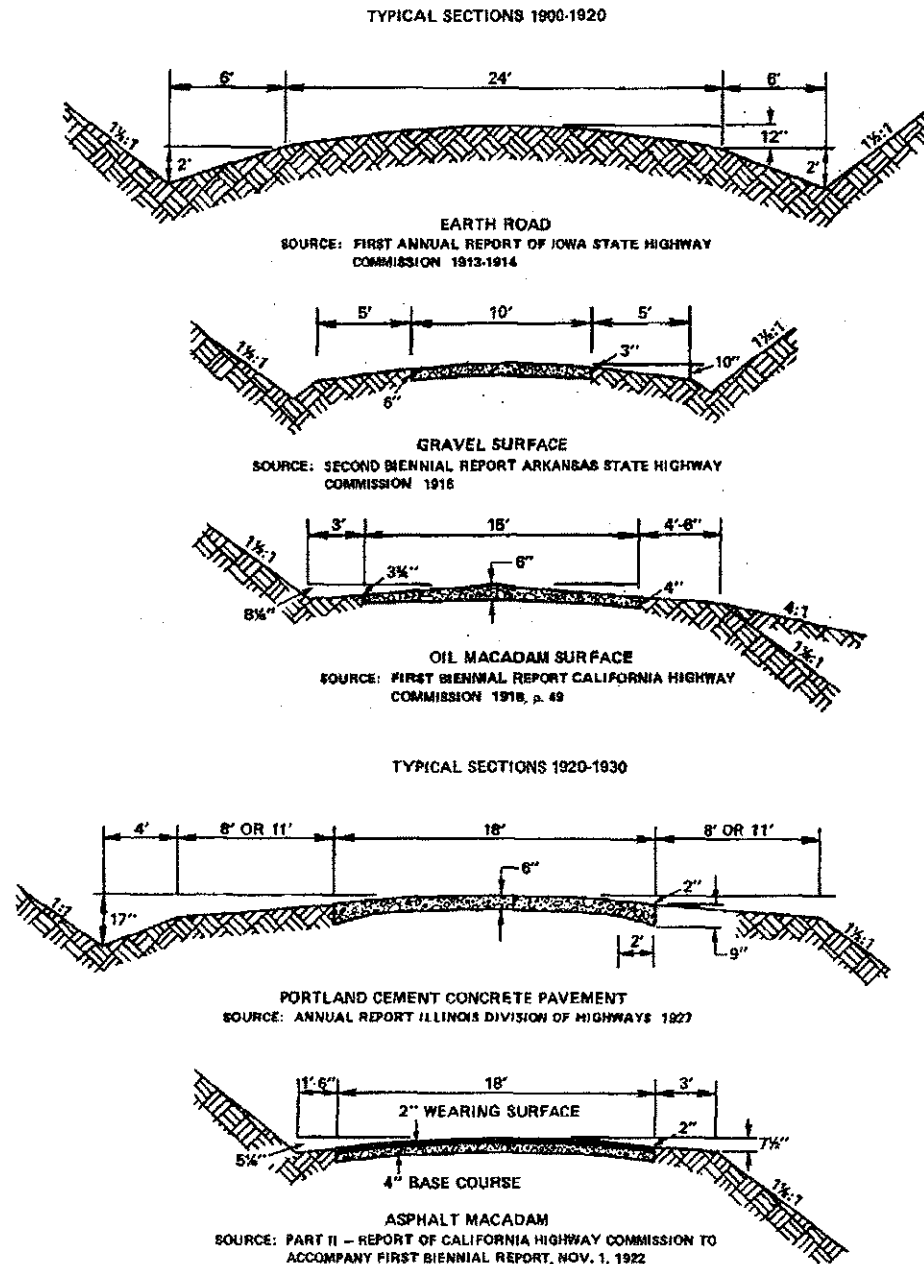
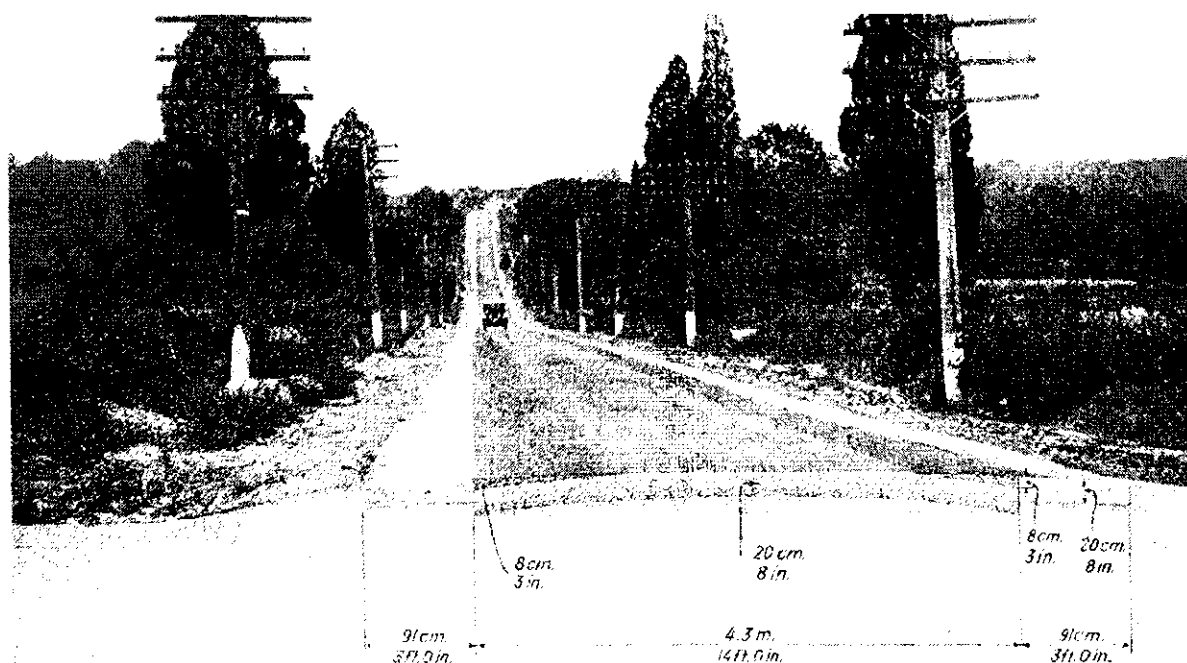


Figure 43 Cross-sections showing evolution of highway pavements, 1900-1930 (adapted from U.S. Department of Transportation, America's Highways 1776-1976: A History of the Federal-Aid Program [Washington, D.C.: Government Printing Office, 1976])

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 231)



BITUMINOUS MACADAM SURFACE, WIDENED WITH CONCRETE SHOULDERS

The old road has been entirely salvaged. In the resurfacing with modern material, the crown was reduced

Figure 44 Illustration of technically improved roadway from E. W. James, Highway Construction, Administration, and Finance (Washington, D.C.: Highway Education Board, 1927)

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Figure 45 Illustration of "improved highway" from George Chatburn, Highways and Highway Transportation (New York: Thomas Crowell Company, 1923)

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Figure 46 Roadside improvement cartoon (reprinted in American Civic Annual, 1929)

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Figure 47 Roadside improvement cartoon (reprinted in American City 41
[October 1929])

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 235)

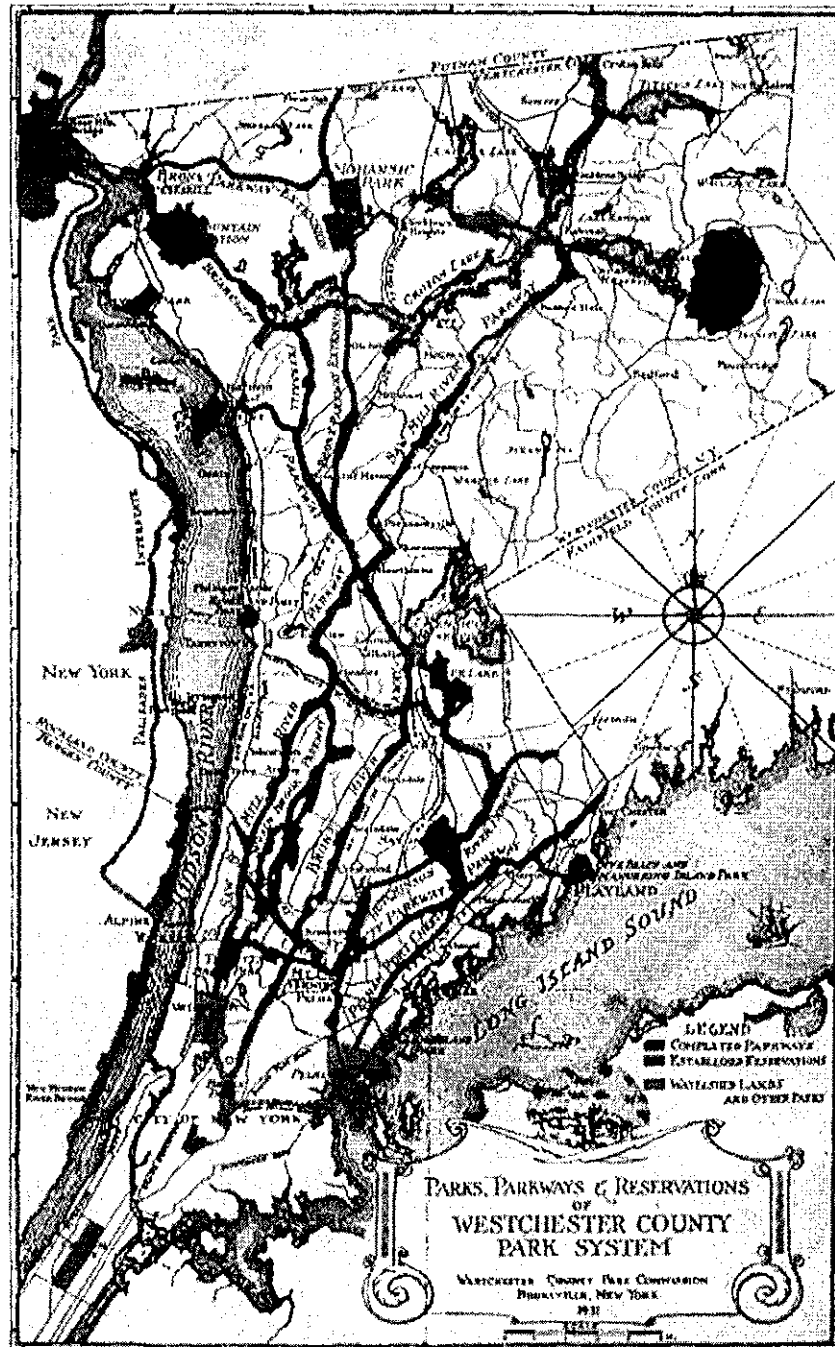


Figure 49 Map of Westchester County Park System, 1931
(Westchester County Park Commission)

Bronx River Parkway Scarsdale, N. Y.

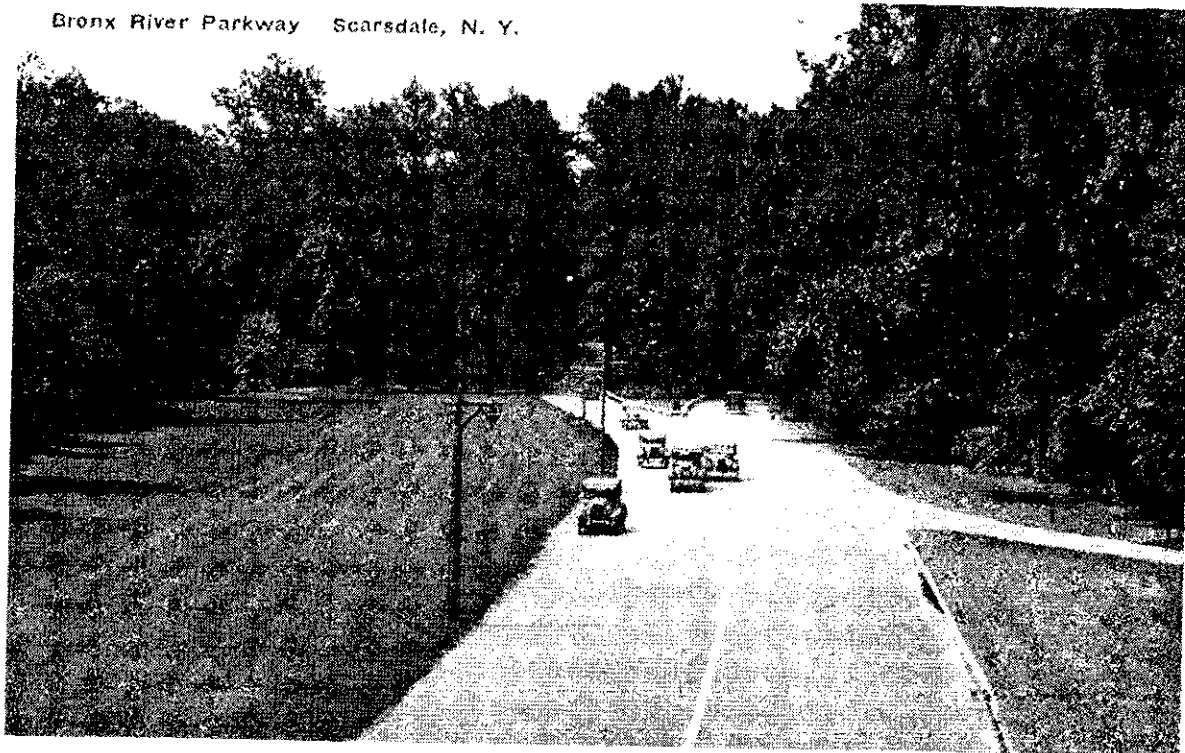


Figure 50 Bronx River Parkway, Scarsdale, N.Y. (vintage postcard: author)

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Figure 51 Westchester County Park System, Typical Parkway
Sections (Nolen and Hubbard, Parkways and Land Values)

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Figure 52 Hutchinson River Parkway (Noien and Hubbard,
Parkways and Land Values)

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Figure 53 Westchester County Park Commission plan for Saw Mill River Parkway, April 1924 (detail) (Report of the Westchester County Park Commission, 1924)

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Figure 34

Hutchinson River Parkway Development Plan (Report of the Westchester County Park Commission, 1925)

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Figure 55 Hutchinson River Parkway at Mill Road, New Rochelle, N.Y. (Nolen and Hubbard, Parkways and Land Values)

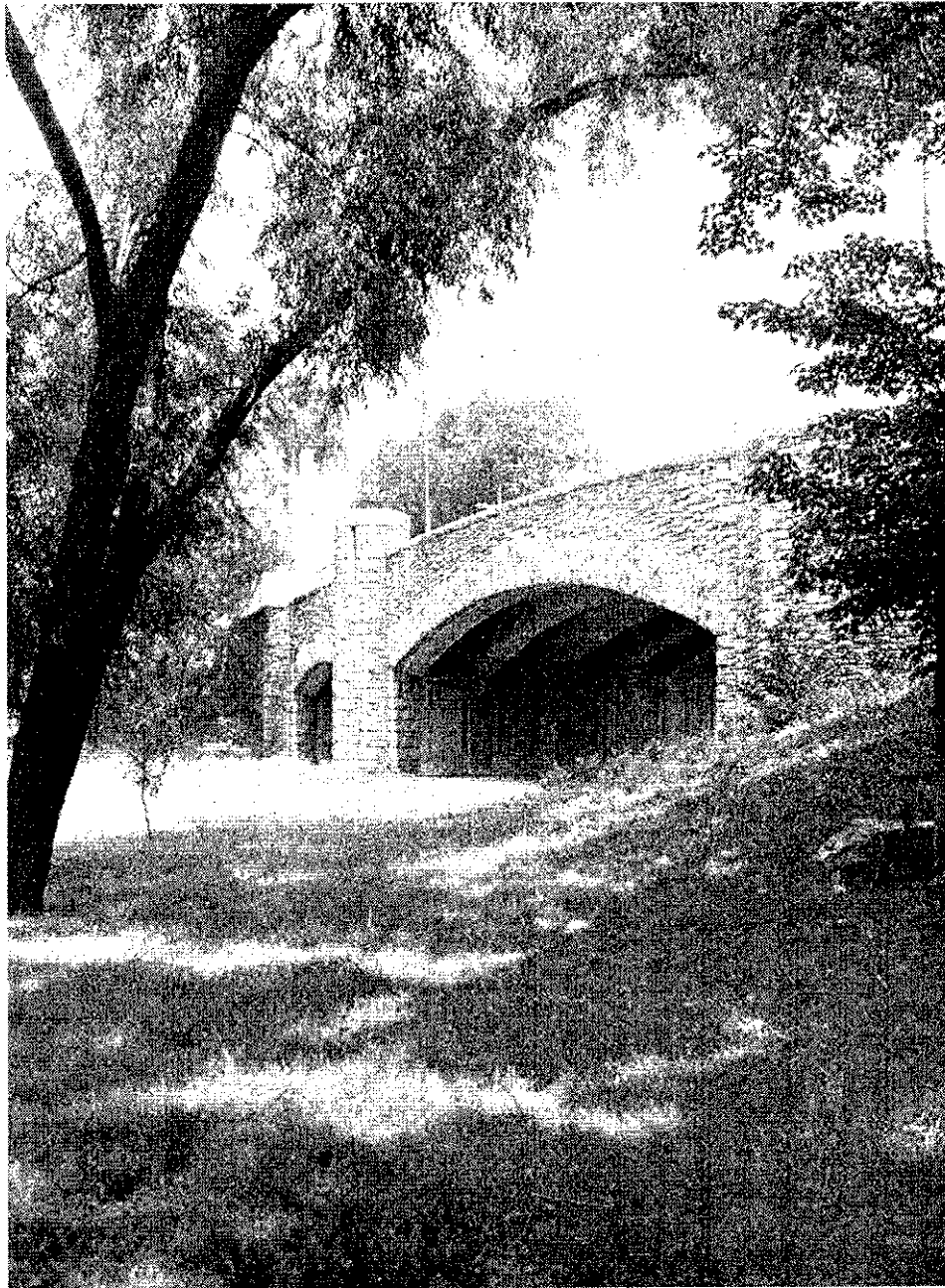


Figure 56 Classic stone-faced, rigid-frame concrete-arch parkway underpass and landscape setting, Mount Vernon, N.Y. (Westchester County Park Commission)



Figure 57 Bronx River Parkway, Ardsley Road Bridge, N.Y.; Arthur G. Hayden, engineer; Charles M. Stoughton, architect (Westchester County Park Commission)



Figure 58 Bronx River Parkway, Palmer Avenue Bridge, N.Y.; Arthur G. Hayden, engineer; Charles M. Stoughton, architect (Westchester County Park Commission)



Figure 59 Bronx River Parkway Extension, Valhalla, N.Y.
(Westchester County Park Commission)

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Figure 60

Detail of Westchester County Park System rustic lighting pole design ("Landscape Construction Notes. XXXIV. Notes on Driveway Lighting Installation," Landscape Architecture 21 [January 1931])

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 246)



Figure 61 Service station on Hutchinson River Parkway (Westchester County Park Commission)

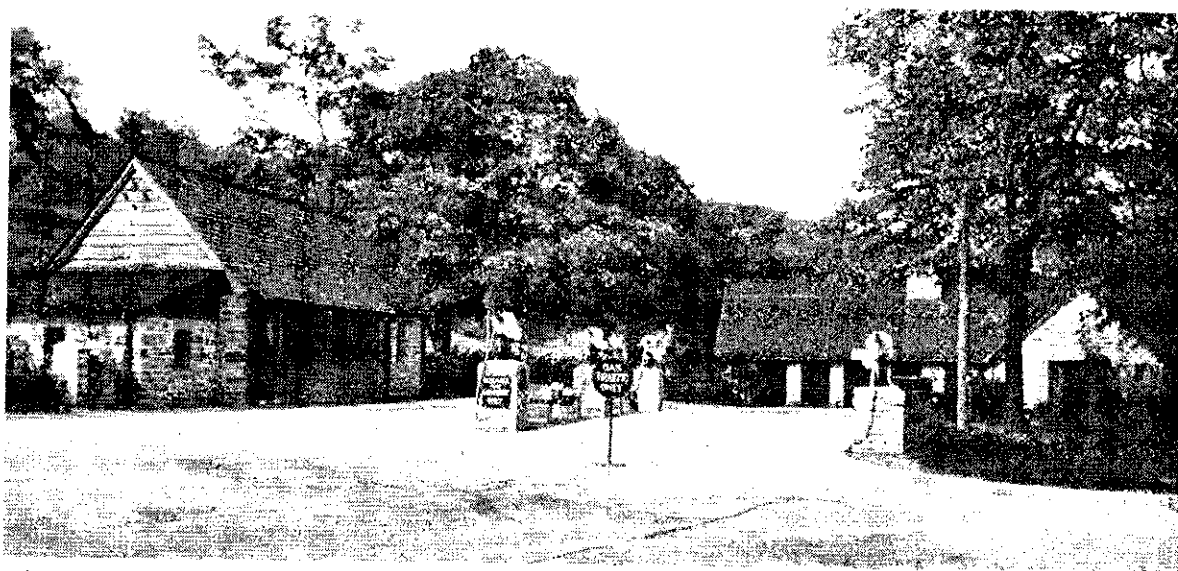


Figure 62 Service station and restaurant, Bronx River Parkway (Westchester County Park Commission)

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HAER No. VA-69

(Page No. 247)



Figure 63 U.S. Route 1 approaching Highway Bridge, April 1930: the main route from Washington to Mount Vernon; note billboards, telephone poles, overhead wires and trolley tracks (Mount Vernon Memorial Highway File #30-1136, RG-30-N, NARA)

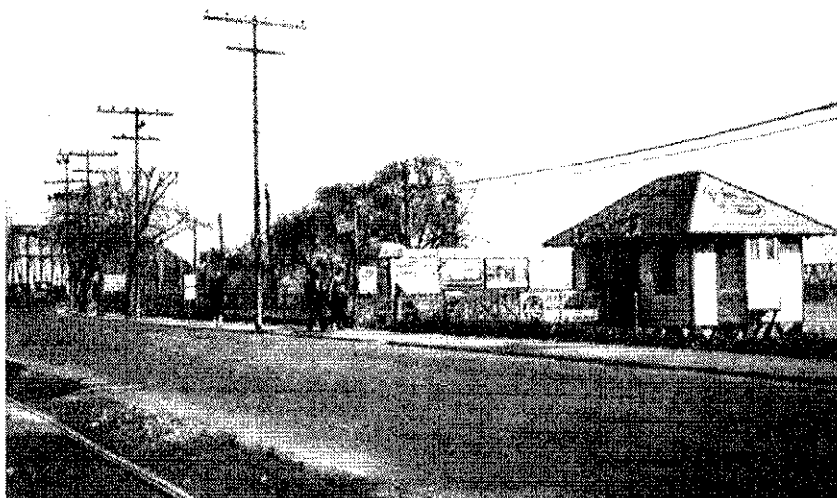


Figure 64 U.S. Route 1 approaching Highway Bridge, November 1929 (Mount Vernon Memorial Highway File #37099, RG-30-N, NARA)

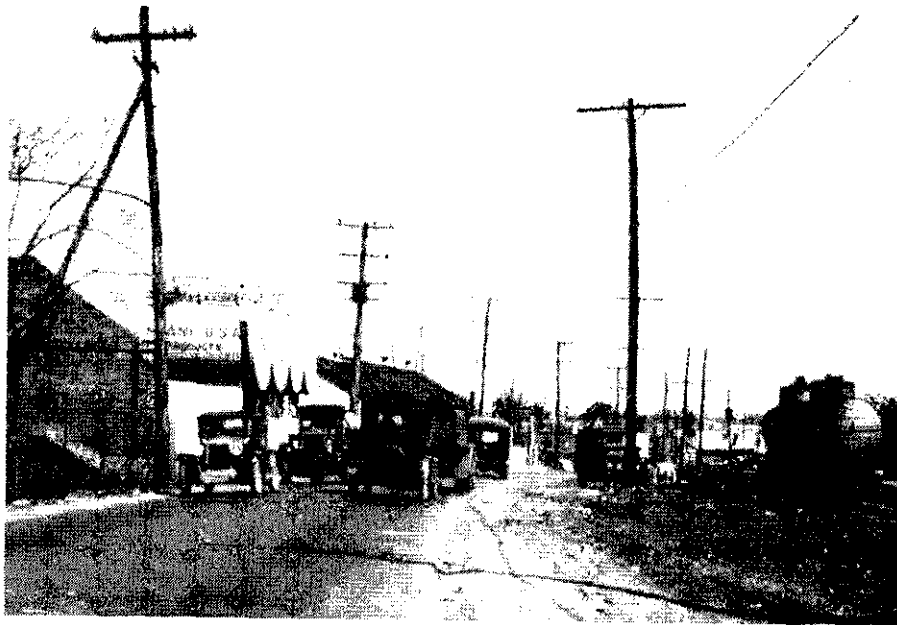


Figure 65 U.S. Route 1 near railroad yards, April 1930; view of Washington Monument obstructed by oil tanks, billboards, and telephone poles (Mount Vernon Memorial Highway File #30-108, RG-30-N, NARA)



Figure 66 U.S. Route 1 opposite railroad yards, November 1929 (Mount Vernon Memorial Highway File #35467, RG-30-N, NARA)

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HAER No. VA-69

(Page No. 249)

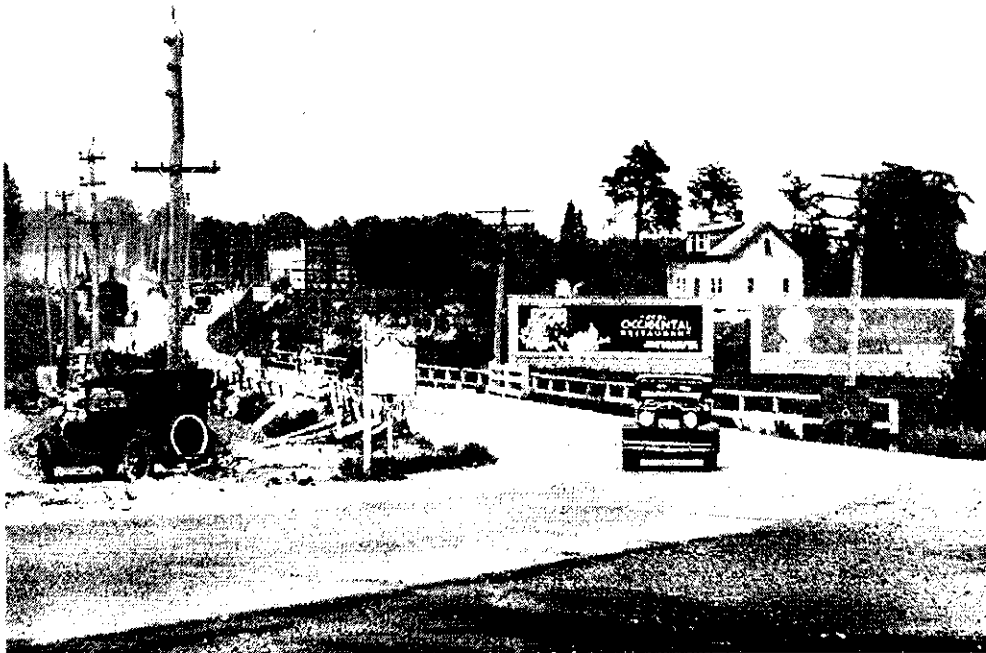


Figure 67 Junction of U.S. Route 1 and old Mount Vernon Road at Gum Springs, summer 1930 (Mount Vernon Memorial Highway File #30-1132, RG-30-N, NARA)



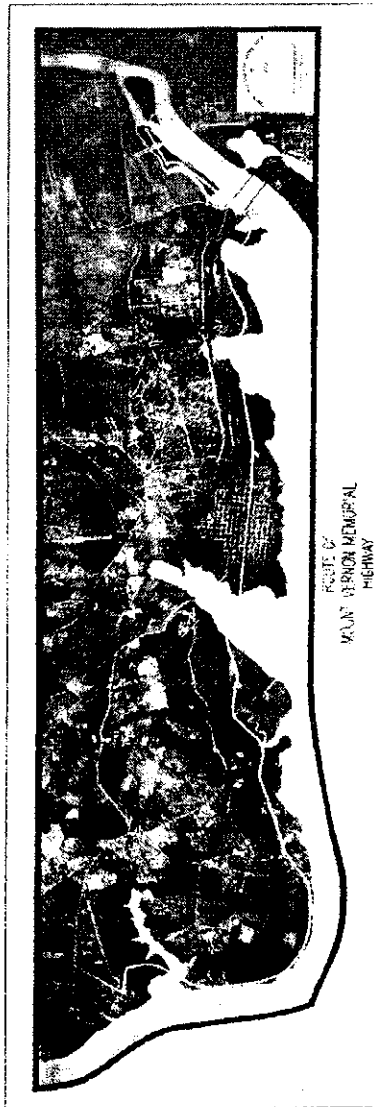
Figure 68 Old gravel road from Gum Springs to Mount Vernon, March 1930 (Mount Vernon Memorial Highway File #30-879, RG-30-N, NARA)



Figure 69 Trolley terminus at Mount Vernon, September 1929 (Mount Vernon Memorial Highway File #36374, RG-30-N, NARA)



Figure 70 Bus parking at Mount Vernon, February 1930 (Mount Vernon Memorial Highway File #30-1005, RG-30-N, NARA)



CAPT. P. ST. J. WILSON, CHIEF ENGINEER, BUREAU OF PUBLIC ROADS, DEPARTMENT OF AGRICULTURE

Figure 71 Aerial photomosaic showing proposed riverfront route of Mount Vernon Memorial Highway (Commission of Fine Arts Tenth Report, July 1, 1921-December 31, 1925)

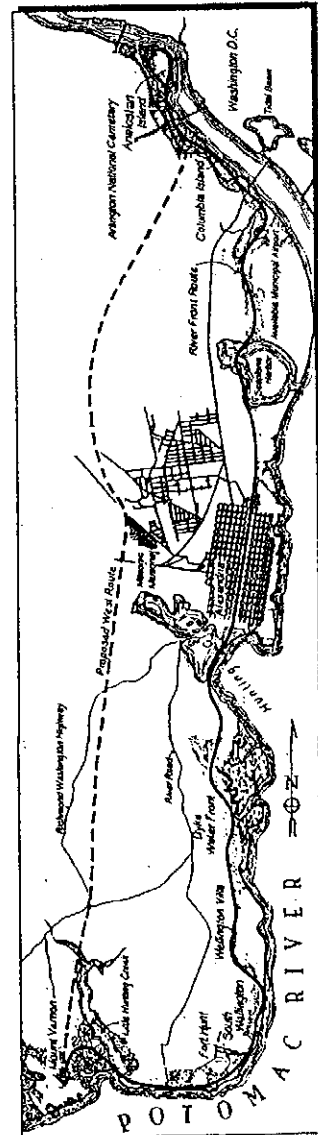


Figure 72 Map showing riverfront and inland route alternatives proposed 1926-1928 (adapted from HAER drawing No. VA-69-5 by Dawson and Lupyak, 1994)

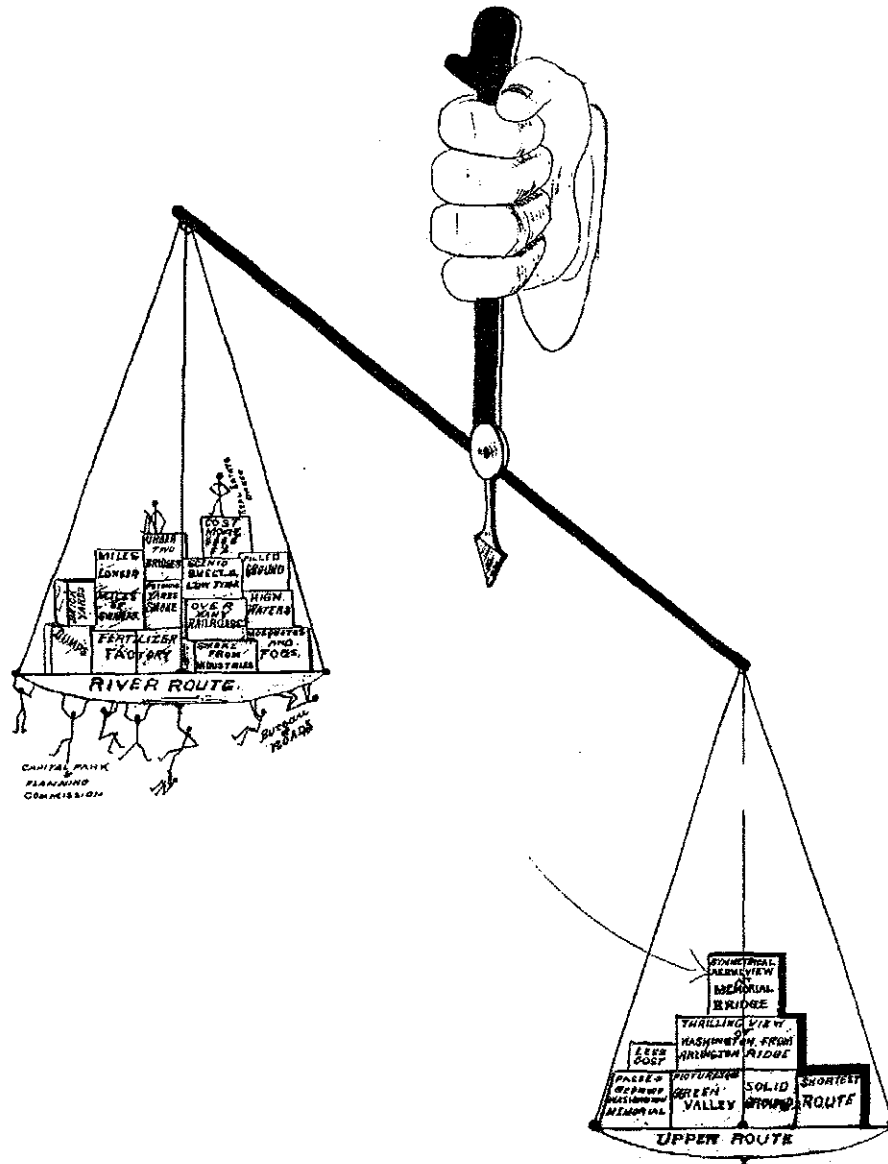


Figure 73 Cartoon protesting official determination to construct Mount Vernon Memorial Highway along waterfront route (Bureau of Public Roads, Classified Central File, 1912-50, 420 General Virginia 1926-1929, Box 1398, RG 30, NARA)

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Figure 74 Cartoon celebrating passage of Mount Vernon Memorial Highway legislation (Alexandria Gazette, May 23, 1928)

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HAER No. VA-69

(Page No. 254)

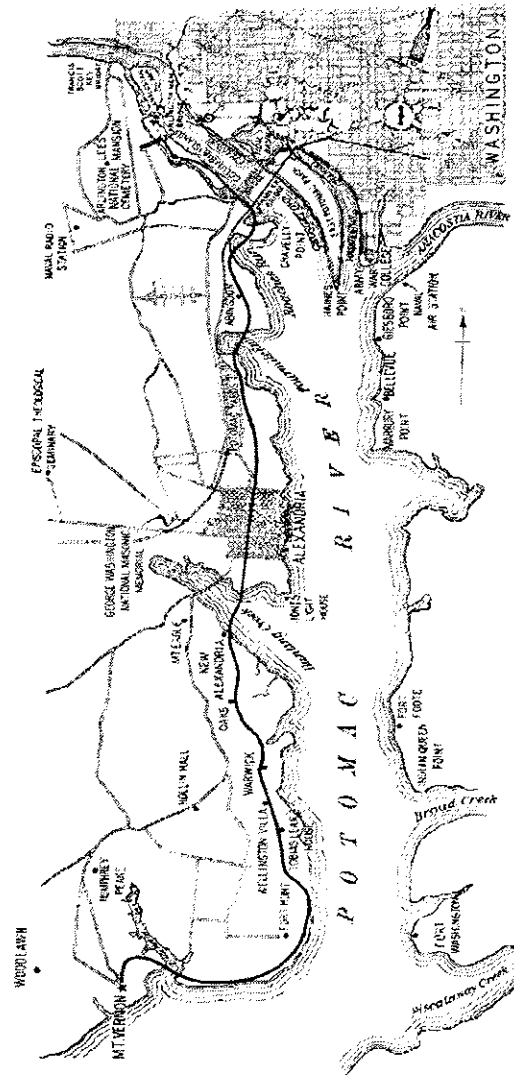


FIGURE 1.—Sketch showing location of Mount Vernon Memorial Highway

Figure 75 Sketch map of Mount Vernon Memorial Highway (U.S. Department of Agriculture, Bureau of Public Roads, The Mount Vernon Memorial Highway: History, Design, and Progress in Construction [Washington, D.C.: Government Printing Office, 1930])

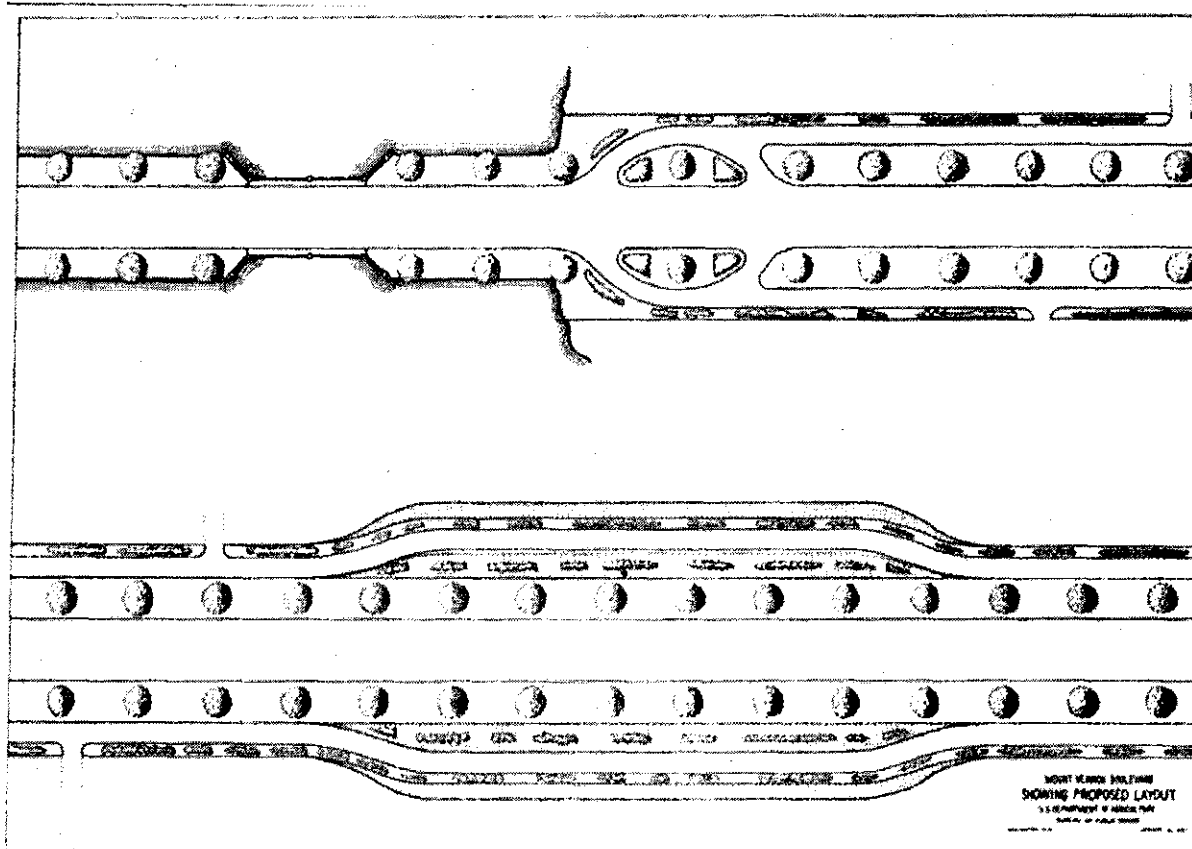


Figure 76 "Plan for Mount Vernon Boulevard Showing Proposed Layout of Highway, Bridges, and Drives, Dec. 14, 1926" (BPR Classified Central File, 1912-50, 420 Reports, Mt. Vernon, Virginia 1925-40, Box 1403, RG 30, NARA)

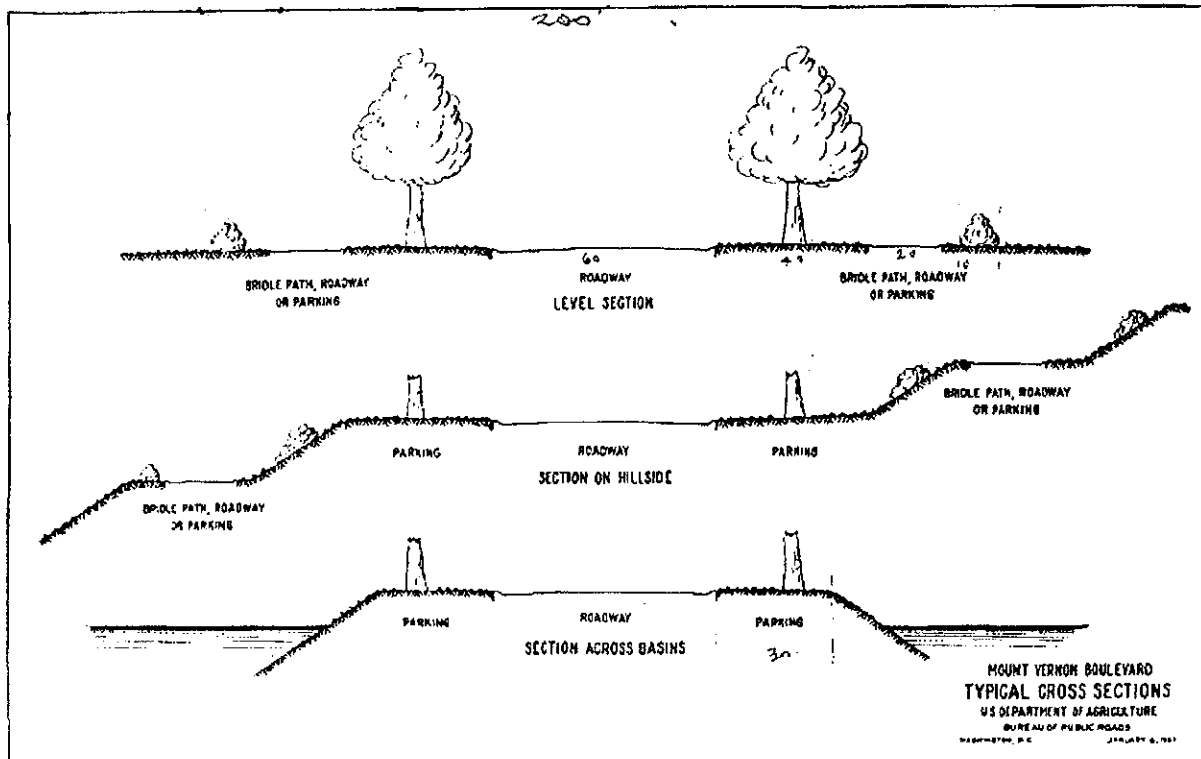
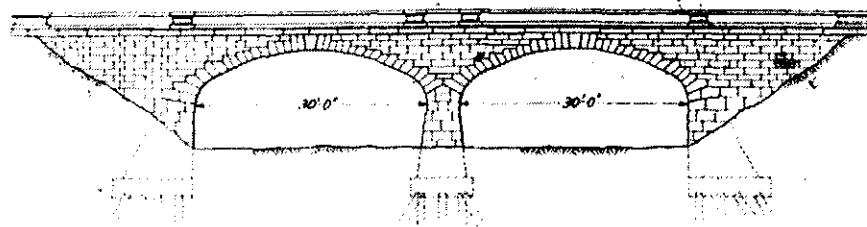


Figure 77 "Mount Vernon Boulevard Typical Cross Sections, January 4, 1927" (BPR Classified Central File, 1912-50, 420 Reports, Mt. Vernon, Virginia 1925-40, Box 1403, RG 30, NARA)

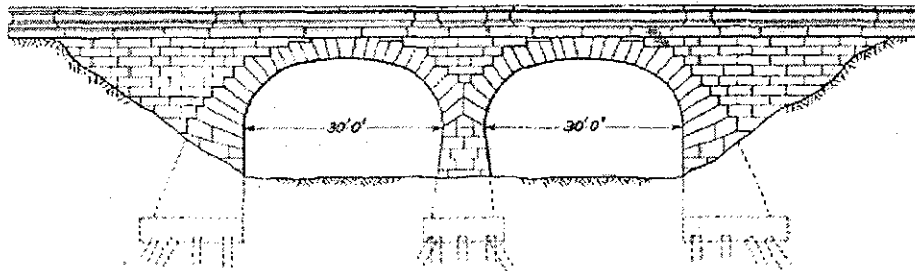
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HAER No. VA-69

(Page No. 257)



MOUNT VERNON BOULEVARD
BRIDGE
OVER
FOUR MILE RUN
U.S. DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
WASHINGTON, D. C. JANUARY 4, 1927 L 927



MOUNT VERNON BOULEVARD
BRIDGE
OVER
LITTLE HUNTING CREEK
U.S. DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS
WASHINGTON, D. C. JANUARY 4, 1927 L 928

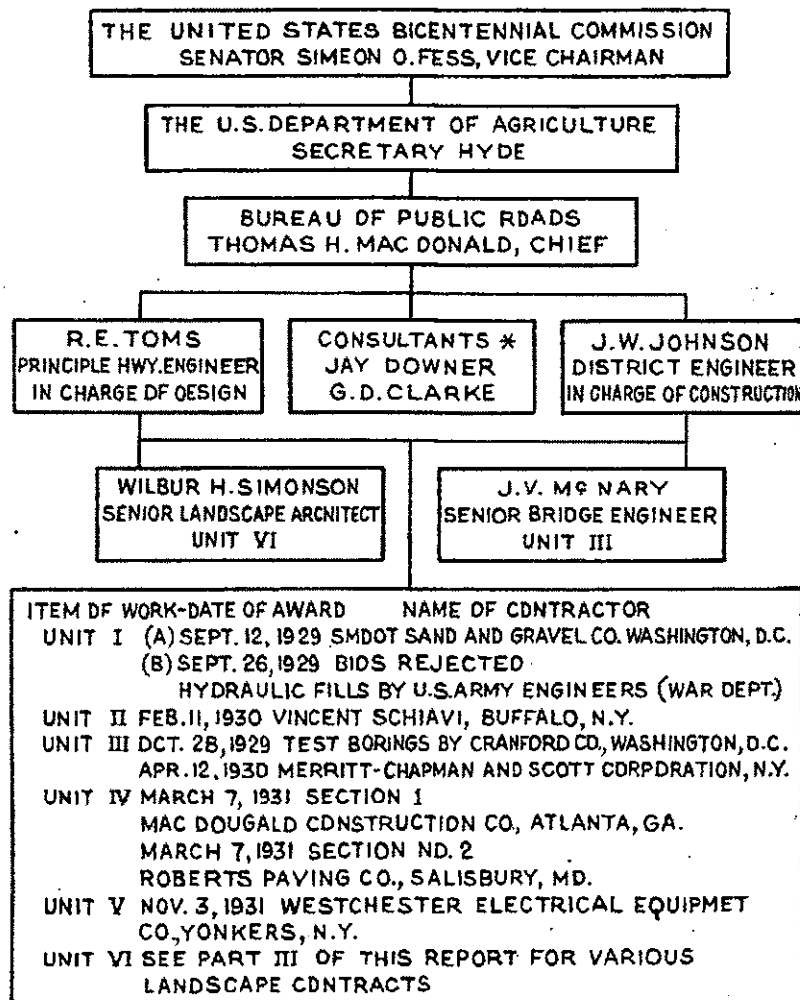
Figure 78 Bureau of Public Road proposals for bridge treatments, January 1927 (BPR Classified Central File, 1912-50, 420 Reports, Mt. Vernon, Virginia 1925-40, Box 1403, RG 30, NARA)

U.S. DEPT. OF AGRICULTURE

BUREAU OF PUBLIC ROADS

MOUNT VERNON MEMORIAL HIGHWAY ORGANIZATION CHART

(AS OF MARCH 15TH 1931)



Note: See Plate 64 A and B for detailed organization of Unit No. VI
** Edward W. Donn Jr. Consultant Architect on concession building at Mount Vernon Terminus.*

Figure 79 Mount Vernon Memorial Highway Organization Chart, March 1931 (Wilbur Simonson, "Final Report for Landscape Unit VI," [Washington, D.C.: BPR, 1932], Plate 64)

U.S. DEPT. OF AGRICULTURE BUREAU OF PUBLIC ROADS
MOUNT VERNON MEMORIAL HIGHWAY ORGANIZATION
FOR LANDSCAPE UNIT VI
 (SPRING 1932 PLANTING PROGRAM)

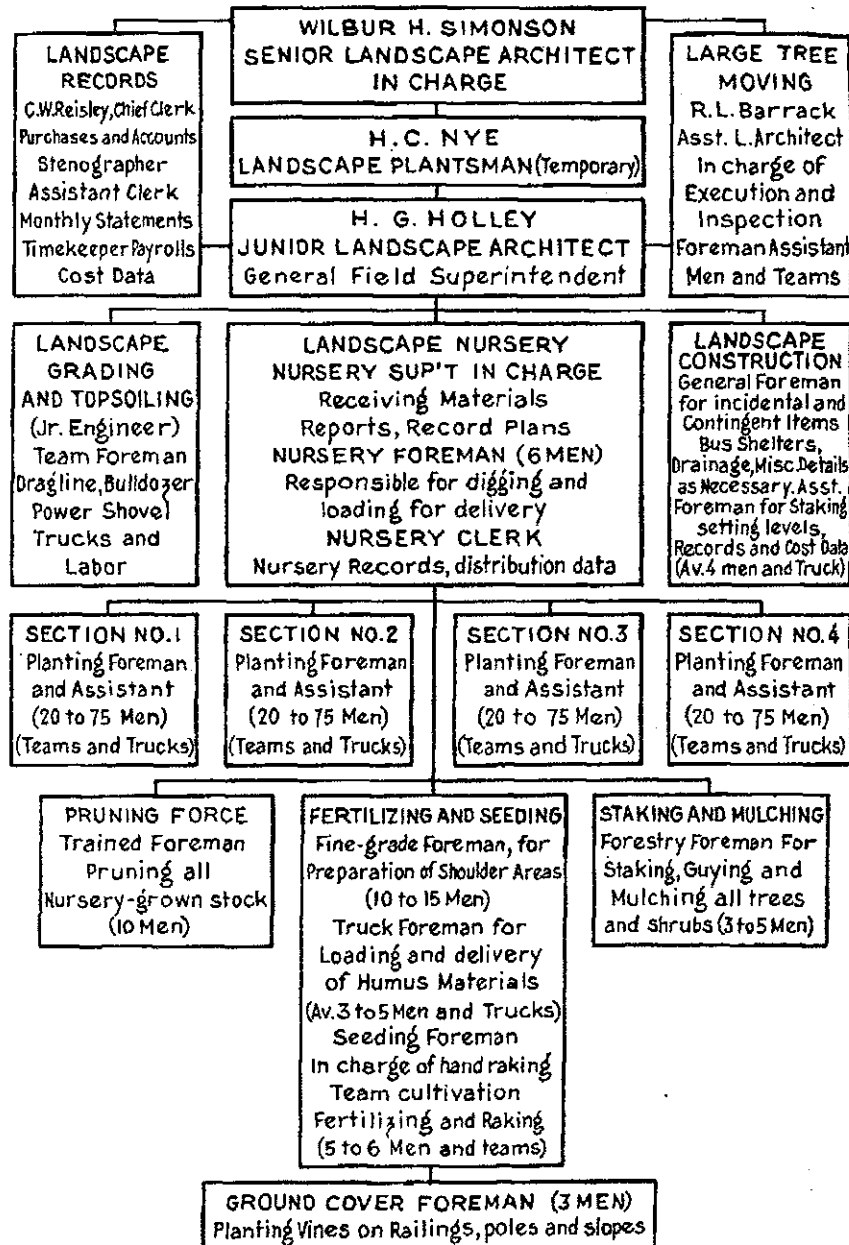


Figure 80

Mount Vernon Memorial Highway Organization
 Chart for Landscape Development (Simonson,
 "Final Report for Unit VI Landscape," Plate 64B)

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HAER No. VA-69

(Page No. 260)

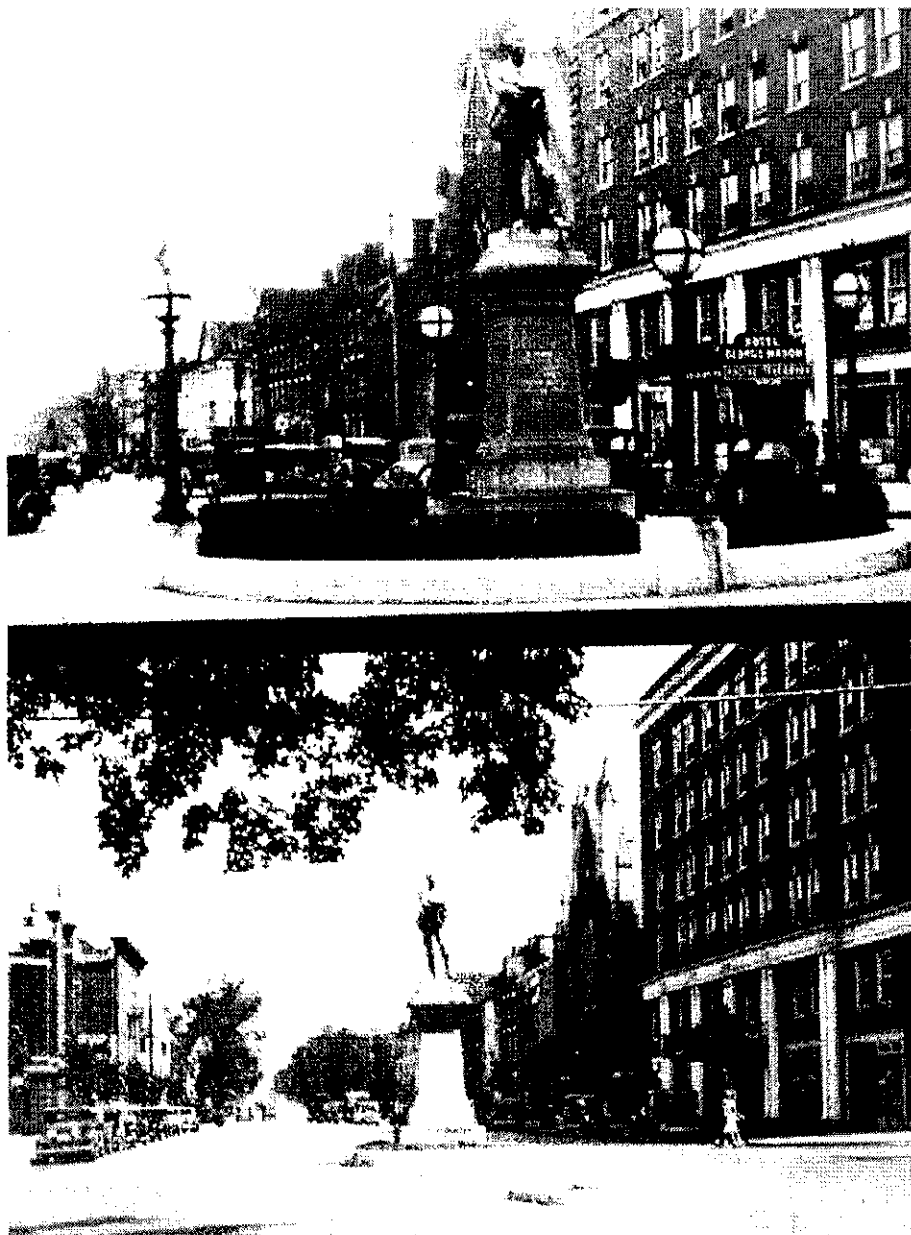


Figure 81 Confederate Monument, Alexandria, Virginia, before and after remodeling to reduce interference with through traffic (Mount Vernon Memorial Highway File #31-1556 [top] & #32-531 [bottom], RG-30-N, NARA)

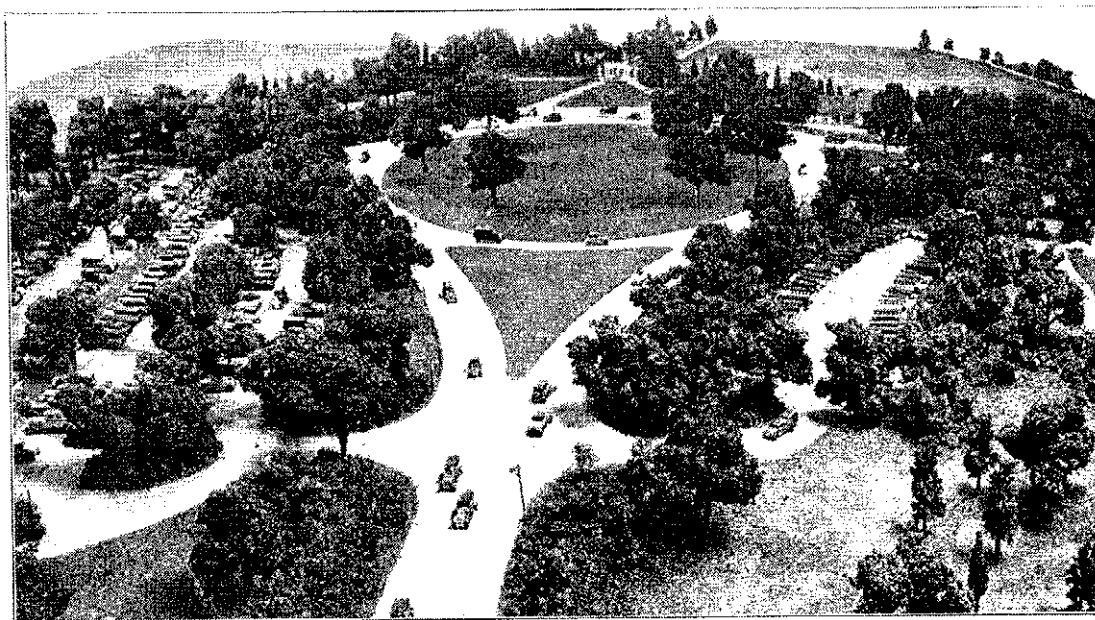


Figure 82 Model of Mount Vernon terminus (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

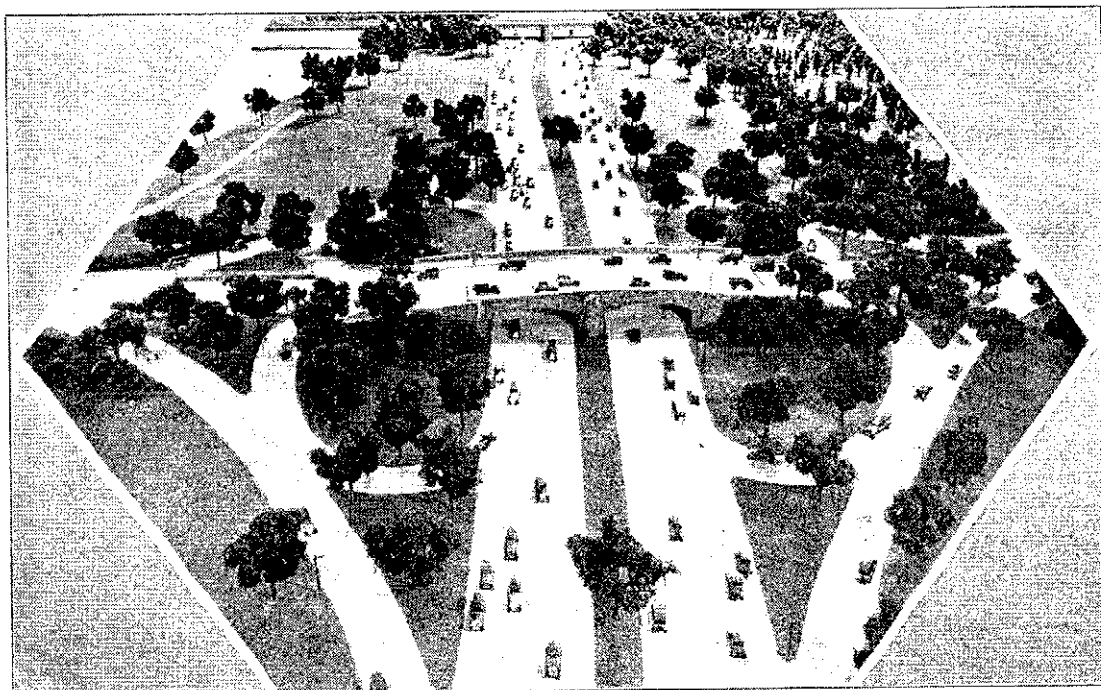


Figure 83 Model of cloverleaf grade separation at intersection of Mount Vernon Memorial Highway and U.S. Route 1 (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

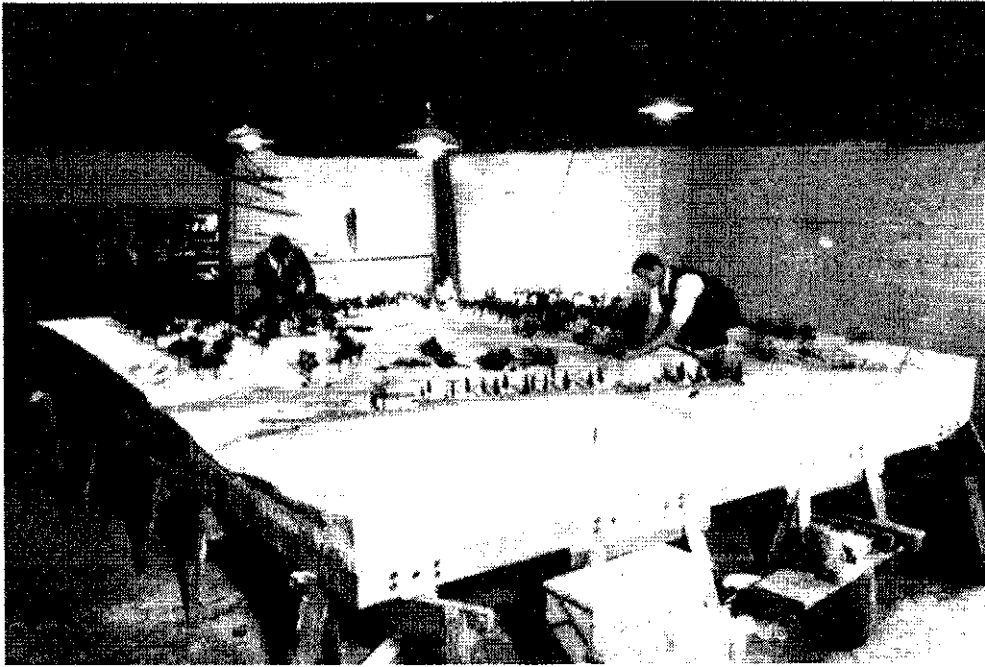


Figure 84 BPR technicians building model of Mount Vernon terminus, January 1930 (Mount Vernon Memorial Highway File #34956, RG-30-N, NARA)

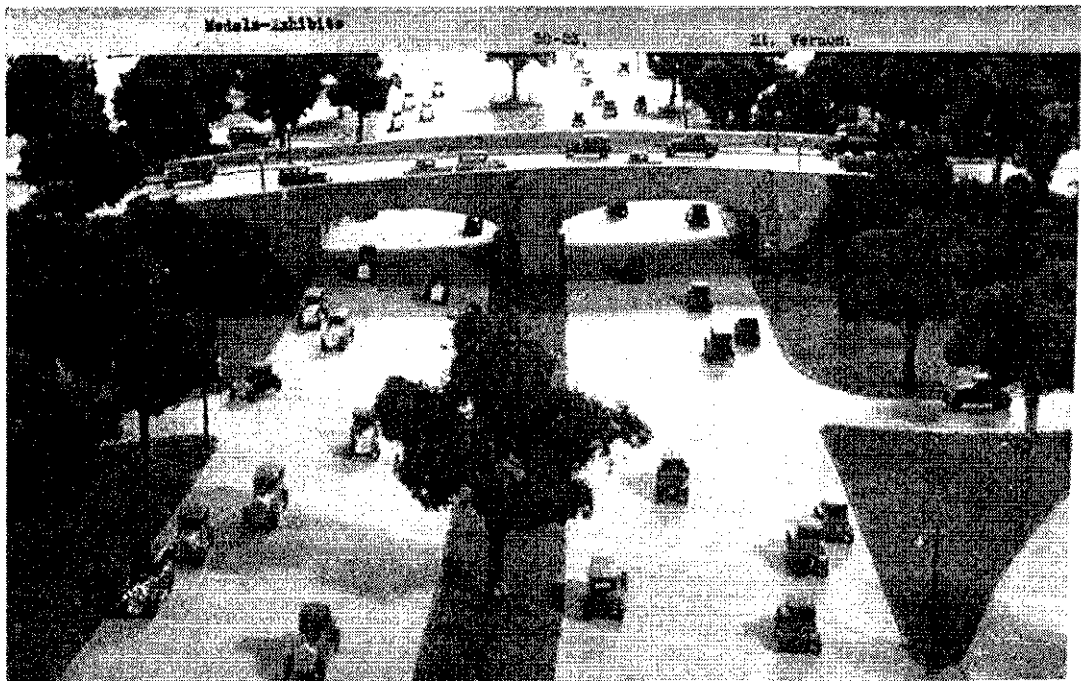
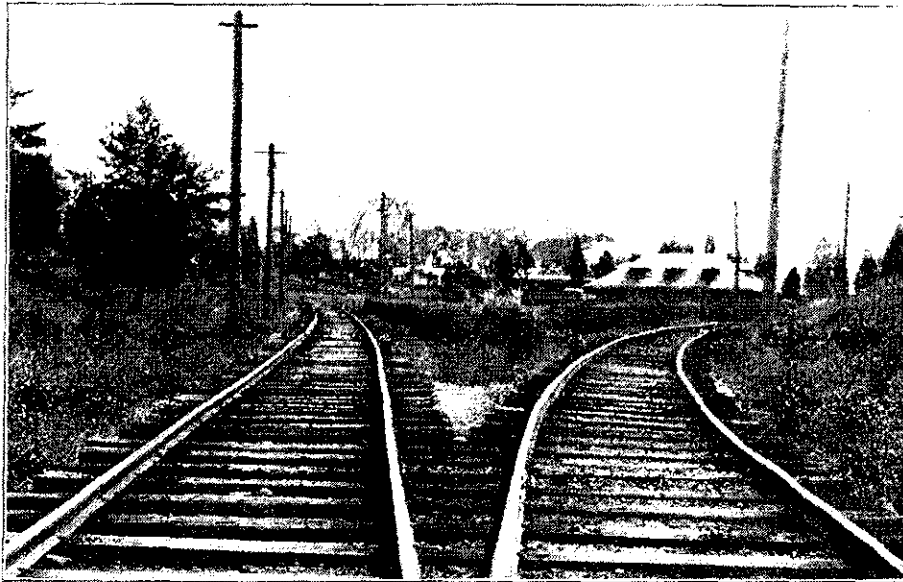
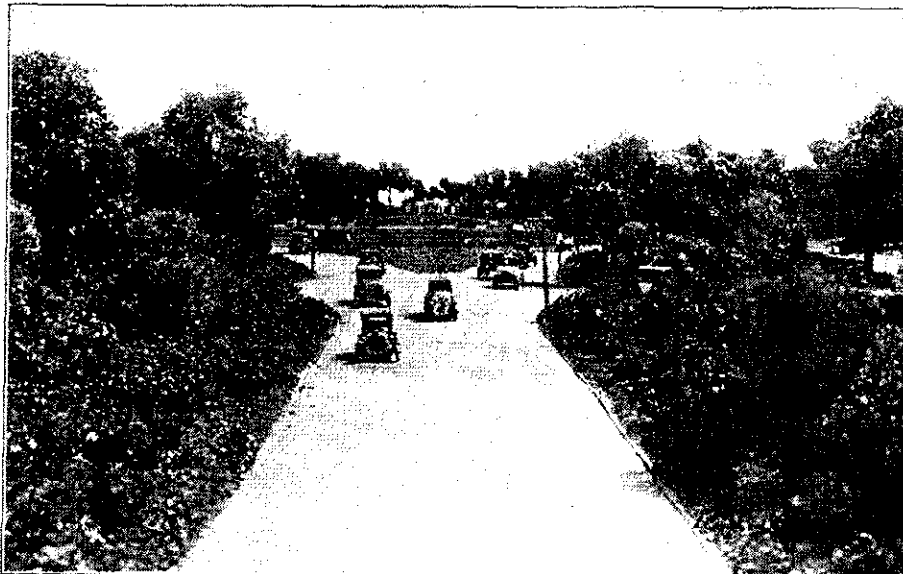


Figure 85 Close-up photograph of cloverleaf model (Mount Vernon Memorial Highway File #30-23, RG-30-N, NARA)



"Before": Entrance to Mount Vernon in 1930



Courtesy U. S. Bureau of Public Roads

"After": View taken from Model, showing the approach to the Mount Vernon Gate as it should appear during the Bicentennial Celebration of 1932

Note how effectively the landscape planting will screen the auto parking spaces from direct view of visitors as they enter the Mount Vernon Terminus area.

Figure 86 Photograph of terminus model used to demonstrate proposed improvements (Simonson, "Notes on the Mount Vernon Memorial Highway: The Southern Terminus at Mount Vernon, Virginia, I," Landscape Architecture 22 [April 1932])

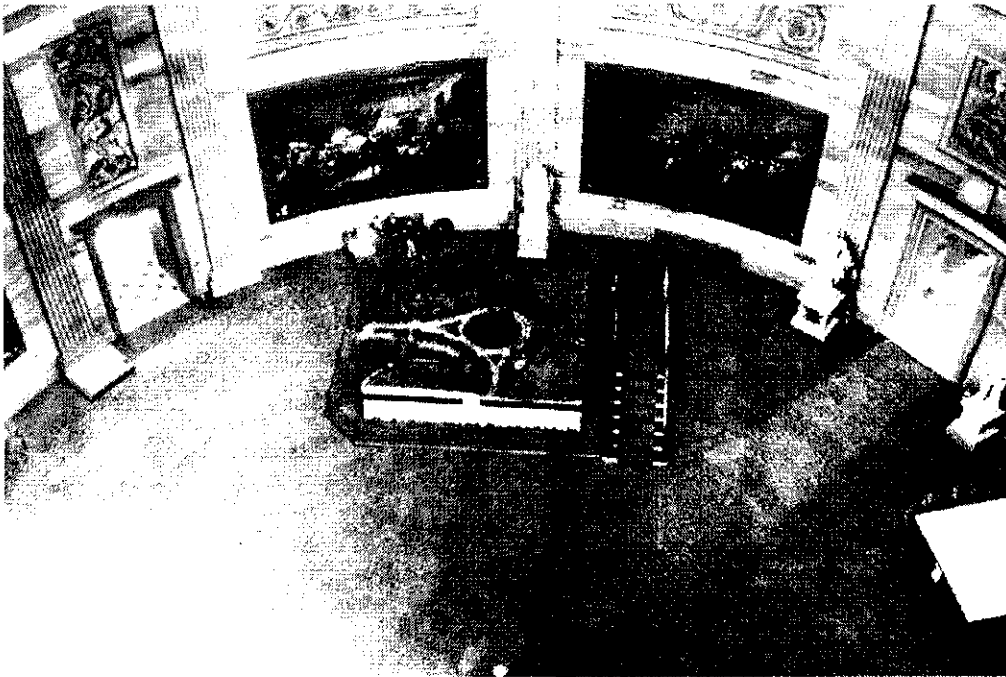


Figure 87 Terminus model on display in U.S. Capitol rotunda (Mount Vernon Memorial Highway File #30-53, RG-30-N, NARA)

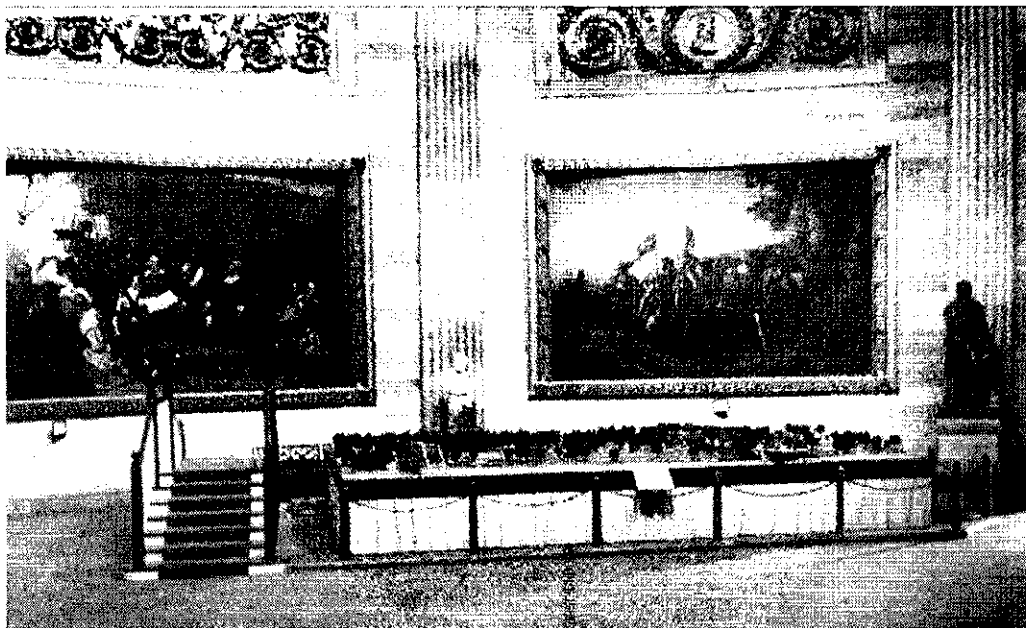


Figure 88 Cloverleaf model on display in U.S. Capitol, juxtaposed with paintings of Pilgrims leaving Holland and landing of Columbus (Mount Vernon Memorial Highway File #30-39, RG-30-N, NARA)



Figure 89 Proposed route of Mount Vernon Memorial Highway in Gravelly Point/Columbia Basin area; beginning of hydraulic fill operation (Mount Vernon Memorial Highway File, RG-30-N, NARA)

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HAER No. VA-69

(Page No. 266)

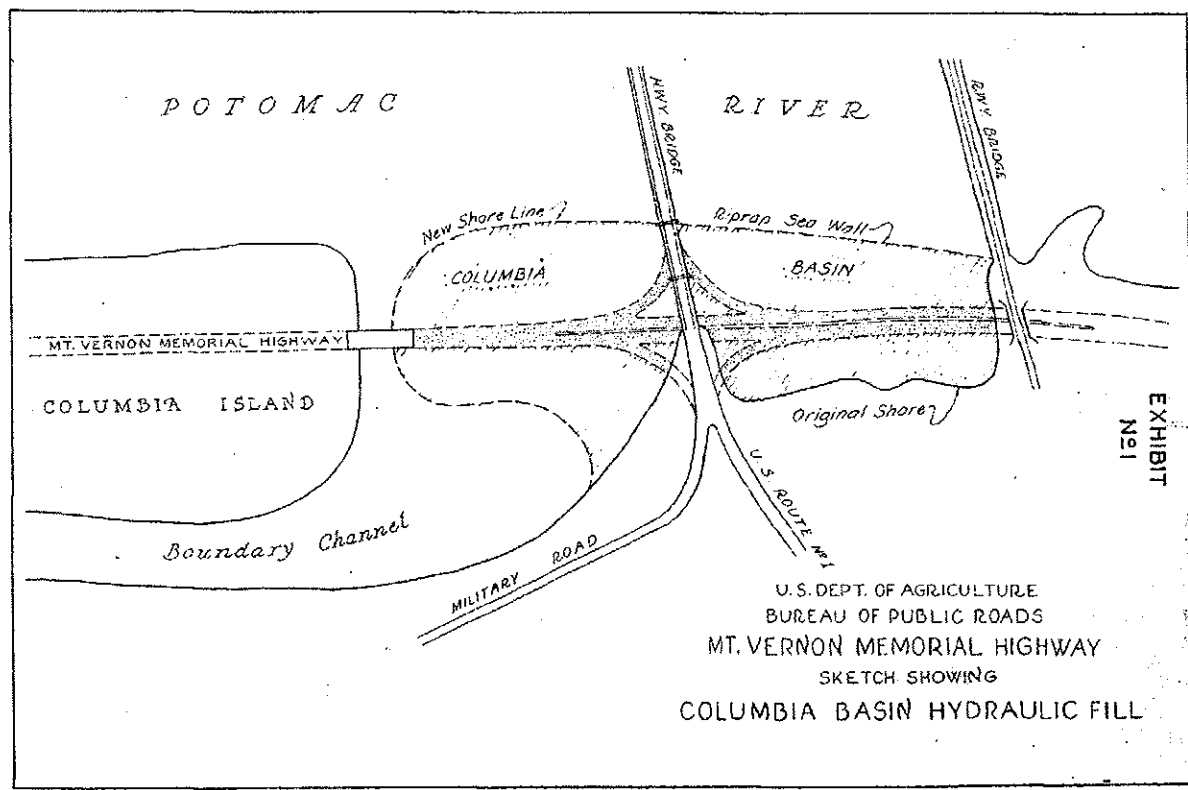
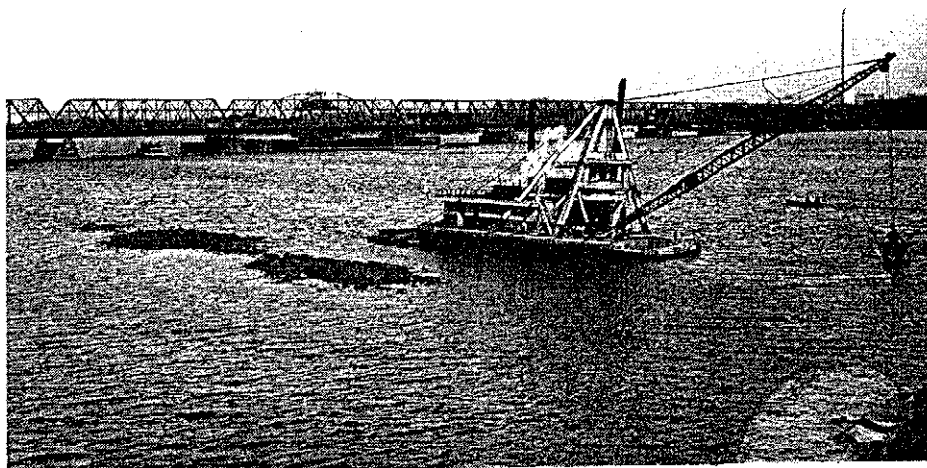
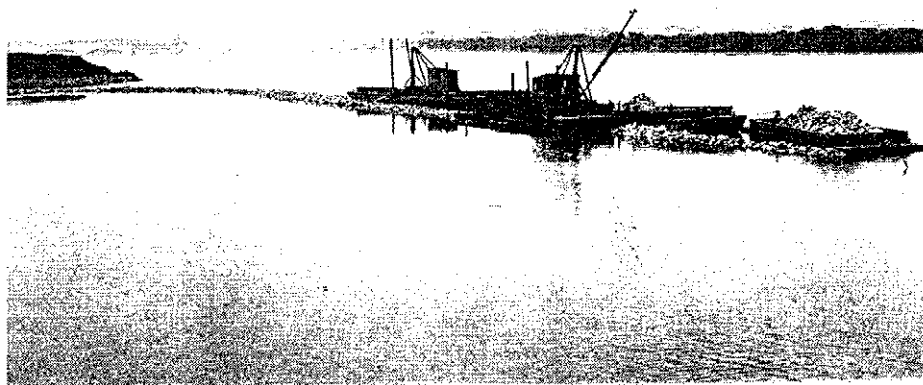


Figure 90 Map showing extent of hydraulic fill in Columbia Basin vicinity (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")

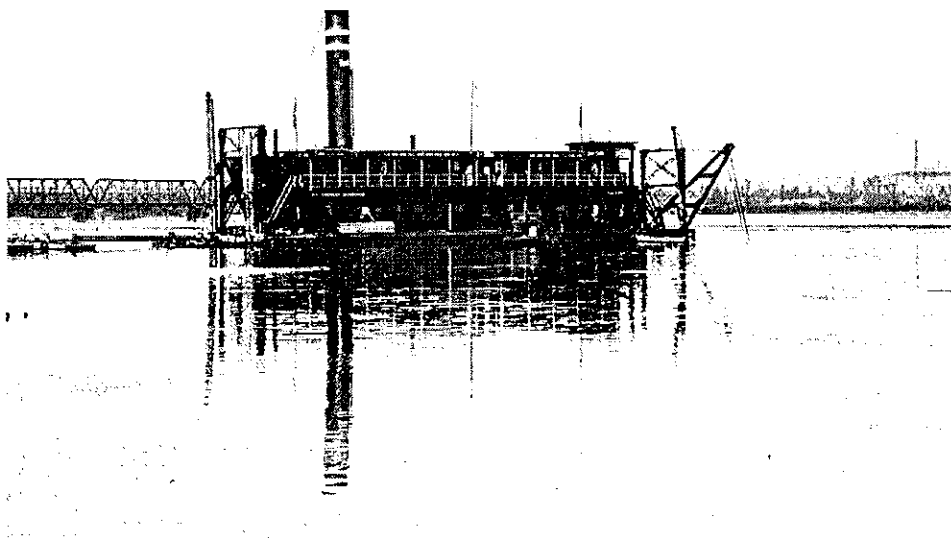


No. 1067.
Smoot Sand & Gravel Co. Dredge - Excavating Six Feet Below Mean
Low Water for Riprap Sea Wall Foundation.

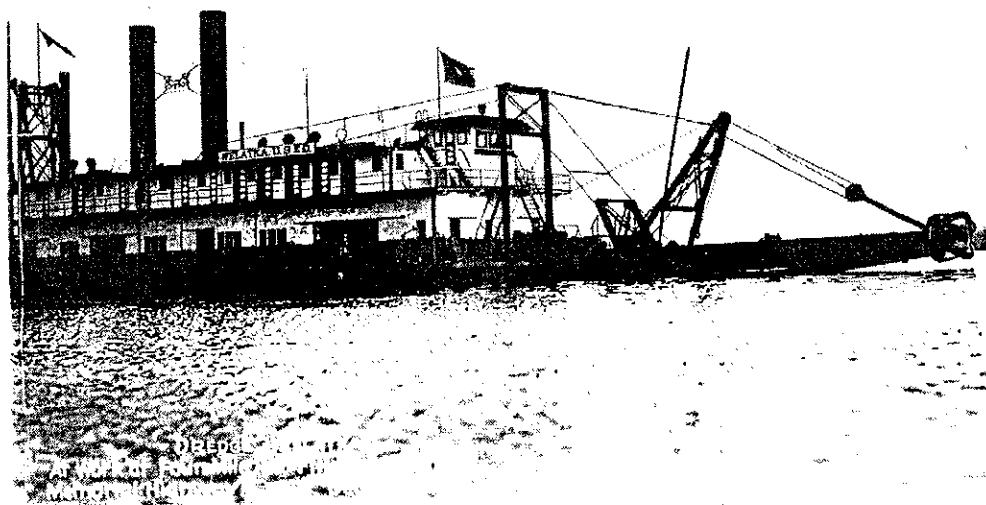


No. 773.
Constructing Riprap Sea Wall.
Dredge Unloading and Placing Stone south of Columbia Island.

Figure 91 Constructing riprap seawall to contain hydraulic fill (Lee,
"Final Report for the Construction of the Mount Vernon
Memorial Highway")



No. 439. Dredge Talcott at Work at Columbia Basin.



Dredge Welatka at Work at Four Mile Run.

Figure 92 U.S Army Corps of Engineers' dredges *Talcott* (top) and *Welatka* (bottom) (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")

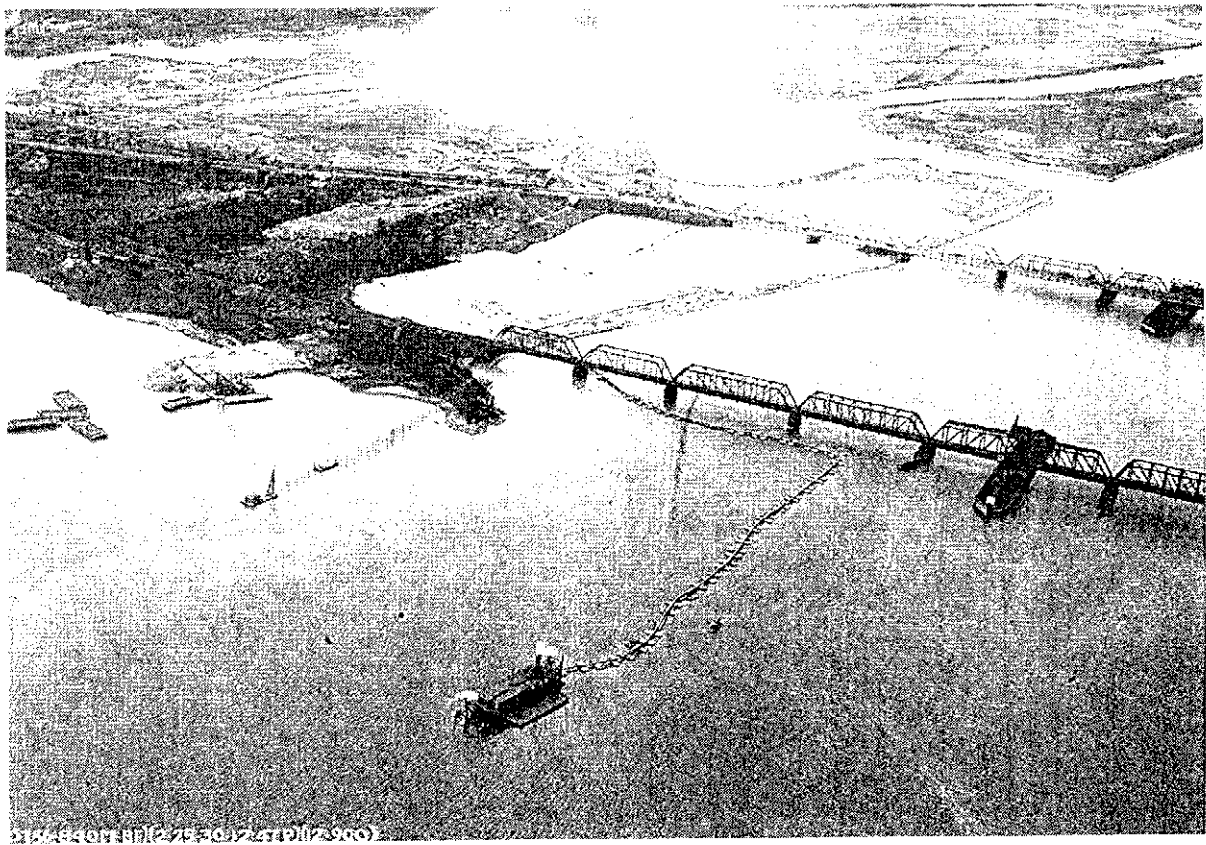


Figure 93 Dredge pumping fill for Columbia Basin from bed of Potomac River, south of RF&P railroad bridge, 1930 (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")



Hydraulic Fill, End of Discharge Pipe

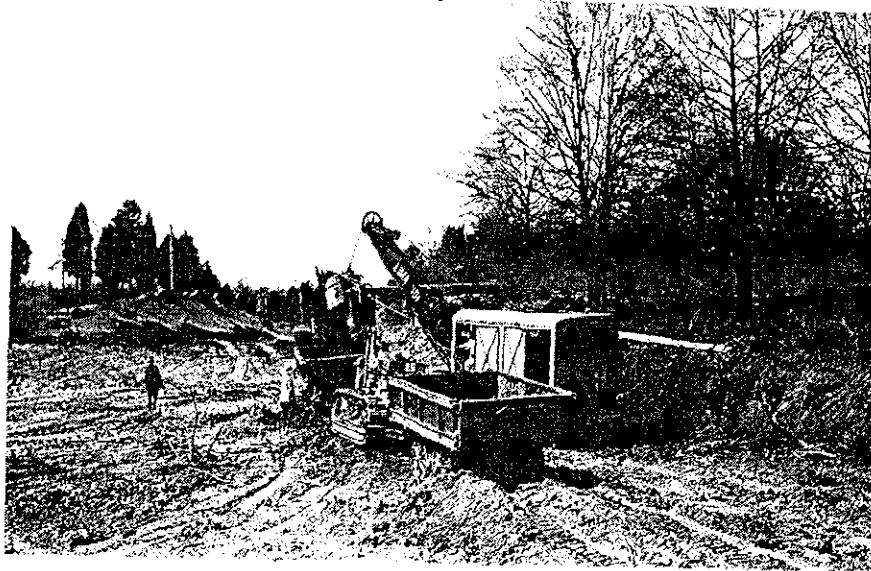


Hydraulic Fill

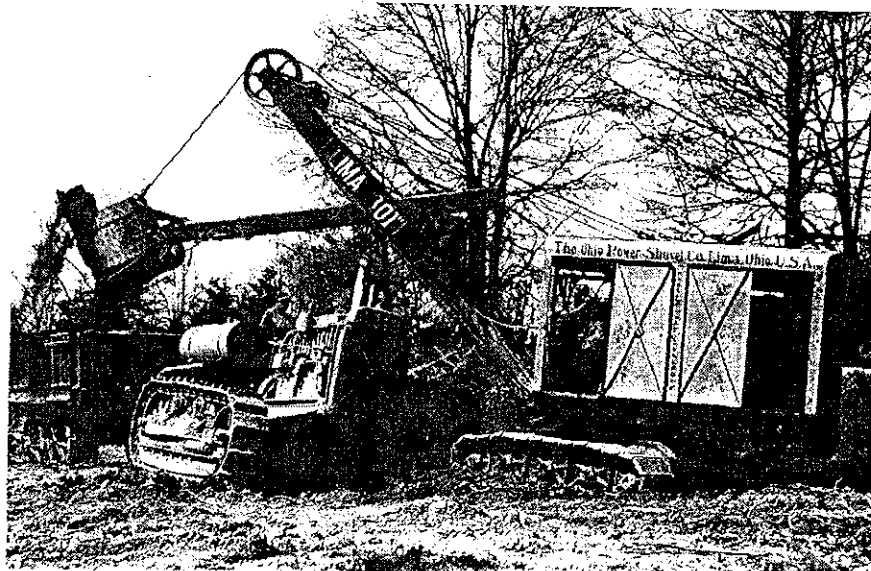


Four Mile Run, South Side, End of Discharge Pipe

Figure 94 Discharge of fill at Little Hunting Creek and Fourmile Run, 1930 (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")

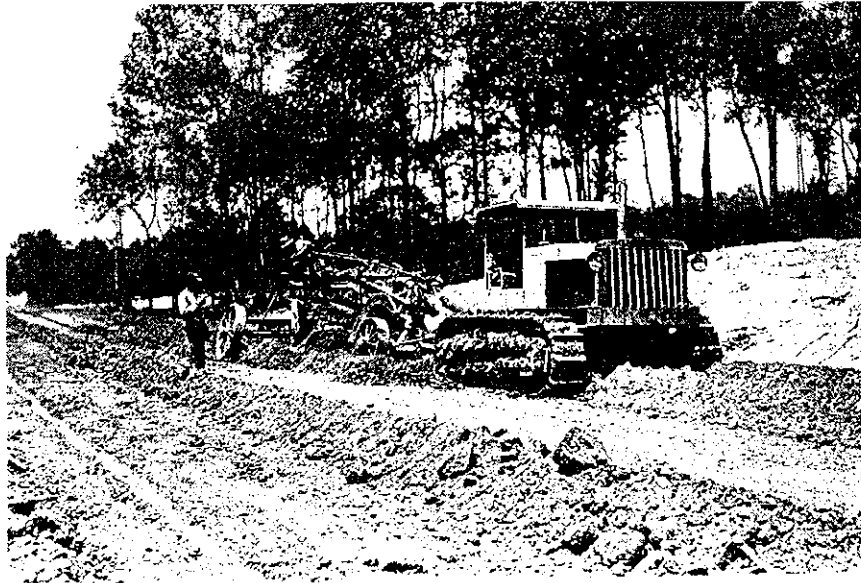


No. 826. Grading Operations near Mount Vernon.



No. 264. Grading Operations.

Figure 95 Preliminary grading for Mount Vernon Memorial Highway, 1930 (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")



No. 523. Finishing Earth Graded Road



No. 554. Finishing Earth Graded Road

Figure 96 Grading roadbed, 1930 (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 273)



WILD UNDERGROWTH AND TANGLE
ON THE HIGHWAY LOCATION. TREES
TO BE SAVED HAVE BEEN CLEARLY
MARKED.



SAME LOCATION WITH CLEARING AND
ROUGH GRADING COMPLETED.



COMPLETED PROJECT. NOTE LOCA-
TION TO FIT NATURAL CONTOURS,
ROUNDED SLOPES, ABSENCE OF
DITCHES, RUSTIC GUARD RAIL, AND
RESULT OF SELECTIVE CUTTING.
GROUND IS SEEDED BUT SOD NOT
YET ESTABLISHED.

Figure 97 Photographic sequence of development process; caption reads in part, "Note location to fit natural contours, rounded slopes, absence of ditches, rustic guard rail, and result of selective cutting" (U.S. Department of Agriculture, Roadside Improvement; U.S. Department of Agriculture Miscellaneous Publication No. 191 [Washington, D.C.: Government Printing Office, 1934])



Figure 98 "Woodland Valley" section of Mount Vernon Memorial Highway; original Simonson's caption read "Graceful alignment in harmony with natural beauty -- this section of the highway was produced by fitting the pavement to the surroundings" (Mount Vernon Memorial Highway File #32-254, RG-30-N, NARA)

GEORGE WASHINGTON MEMORIAL PARKWAY
HAER No. VA-69
(Page No. 275)



Figure 99 Mount Vernon Memorial Highway, September 1932 (Mount Vernon Memorial Highway File #32-247, RG-30-N, NARA)

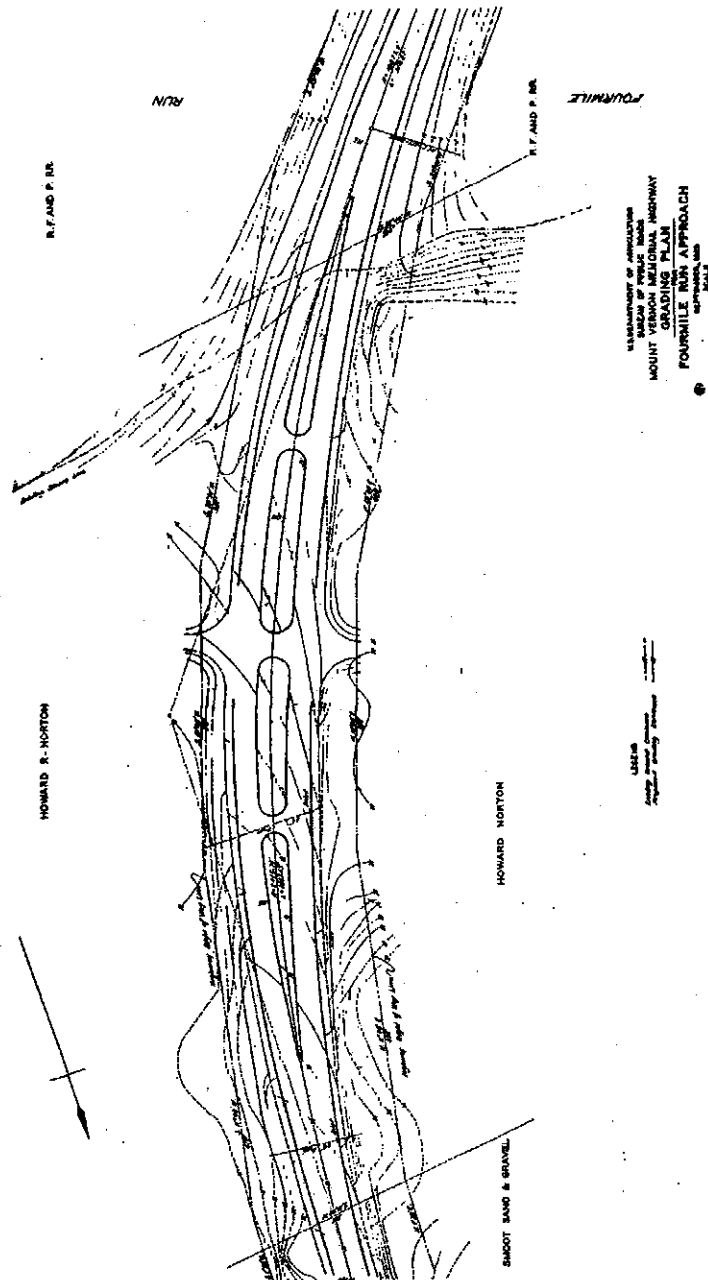


FIGURE 8.—Provision for turning around and also for a small amount of cross traffic at grade has been made on curves where the roadway can be widened to permit the placing of islands of sufficient width. Pleasing and easy-flowing alignment is obtained, and also a safe means of surface crossing. On a heavily traveled 4-lane highway it is almost impossible at times to get sufficient break in traffic to permit crossing at grade. Divided roadways, separated by islands, facilitate crossing at grade by permitting it to be done in two operations. A break in the traffic flowing in one direction permits a crossing to the island, and the crossing is completed at the first break in traffic flowing in the opposite direction. Even on heavily traveled roads, crossings of this character may be accomplished in the space of a few minutes. An extra traffic lane is provided on all divided roadways, so that the inside traffic lane may be used by vehicles desiring to turn.

Figure 100 Grading plan for Fourmile Run approach, illustrating "pleasing and easy flowing alignment" of safety-flare intersection (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

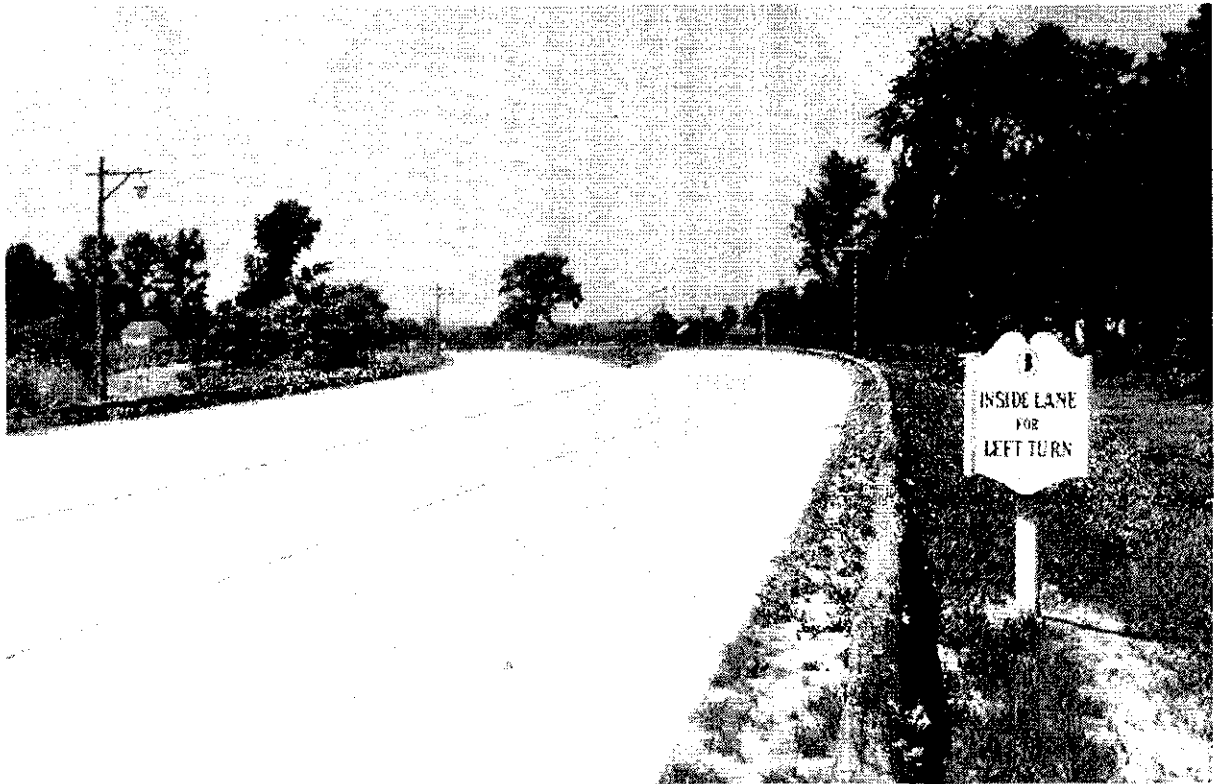


Figure 101 Photograph of safety-flare intersection; Simonson caption reads "*'Streamlining' the movement of high speed modern traffic--the practical needs of traffic circulation and aesthetic attractiveness harmonized*" (Mount Vernon Memorial Highway File #32-160, RG-30-N, NARA)

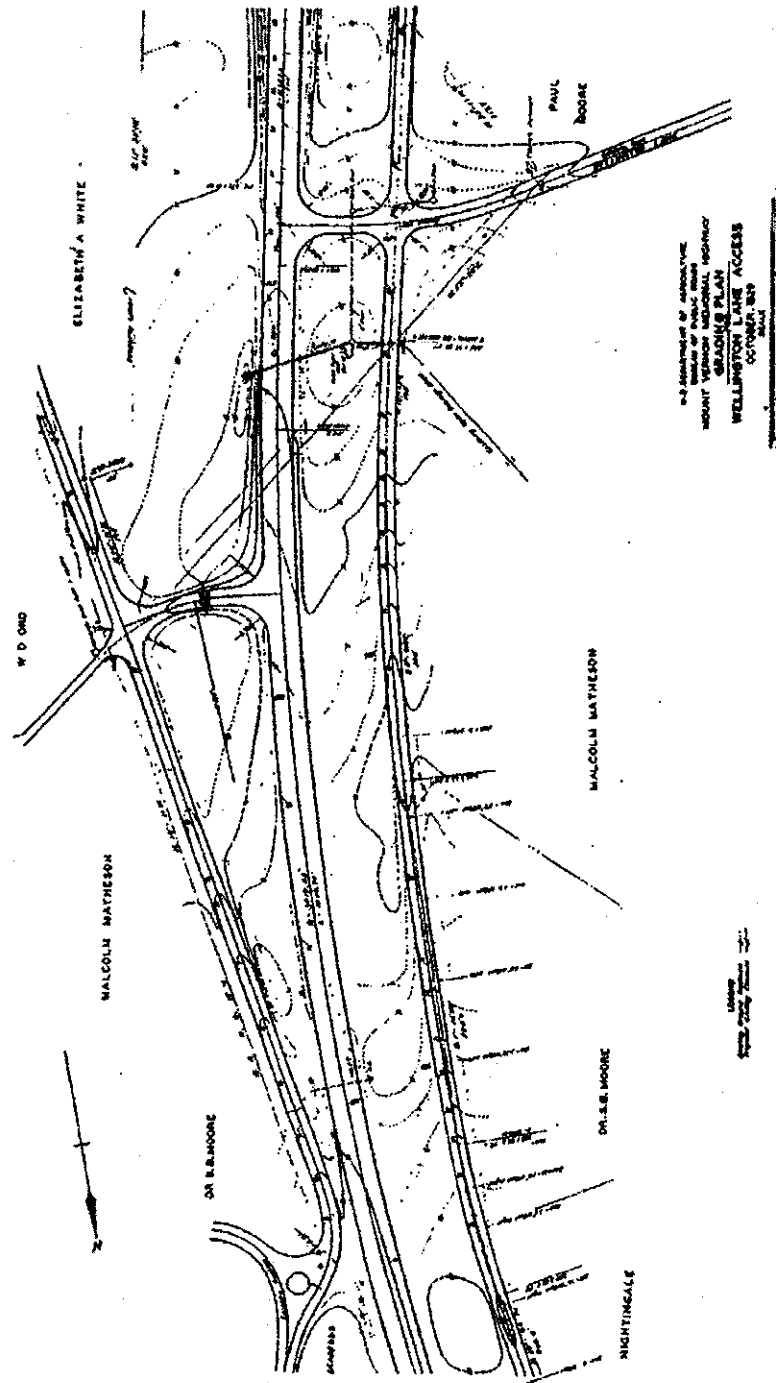


FIGURE 12.—Where it has been necessary to provide crossings at grade and the curvature is too slight to permit dividing the roadway with pleasing lines, staggered outlets have been used. Saggered outlets permit traffic to cross the traffic lanes on one-half of the highway and then flow with and weave across the traffic on the other half to an exit. The distance provided for the weaving of traffic across the half width of the pavement is approximately 400 feet, or the equivalent of a city block.

Figure 102 Grading plan for Wellington Lane access, illustrating "staggered outlets" or "steady flow" intersection (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 279)

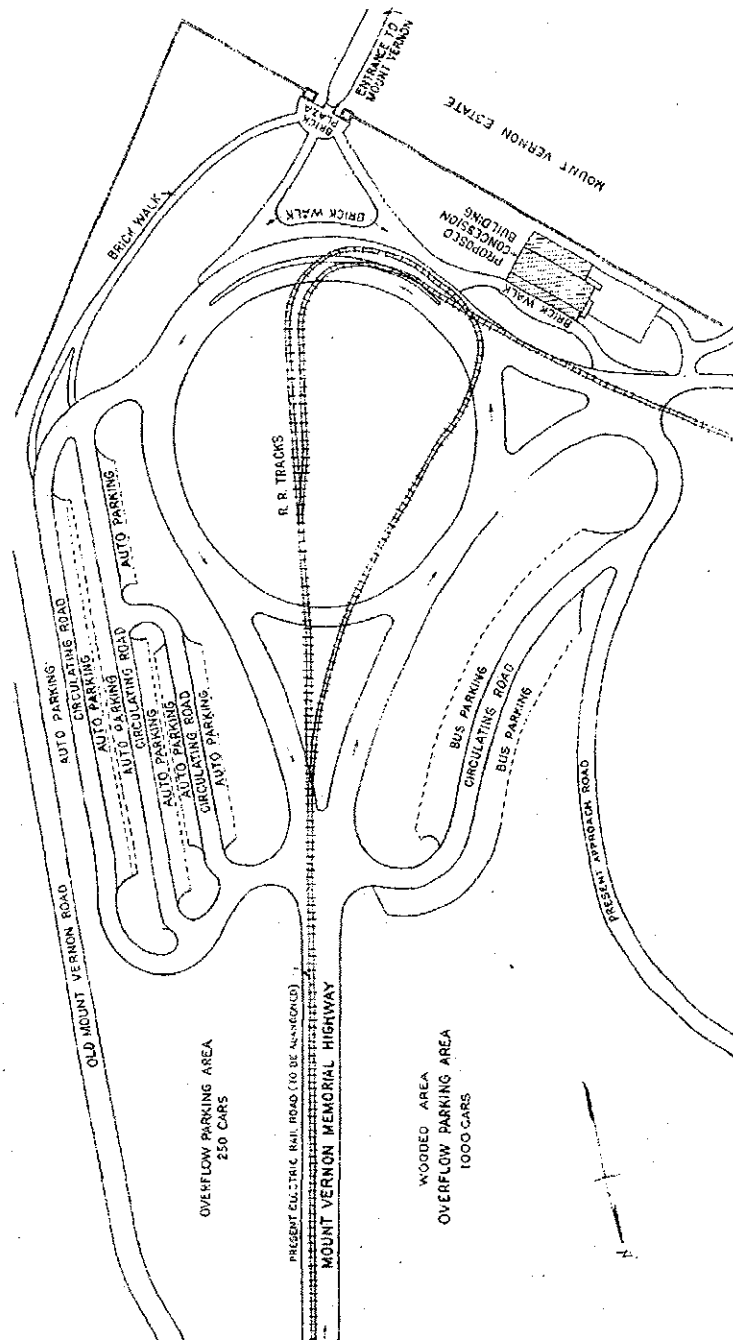


Figure 103 Plan of Mount Vernon terminus arrangements (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

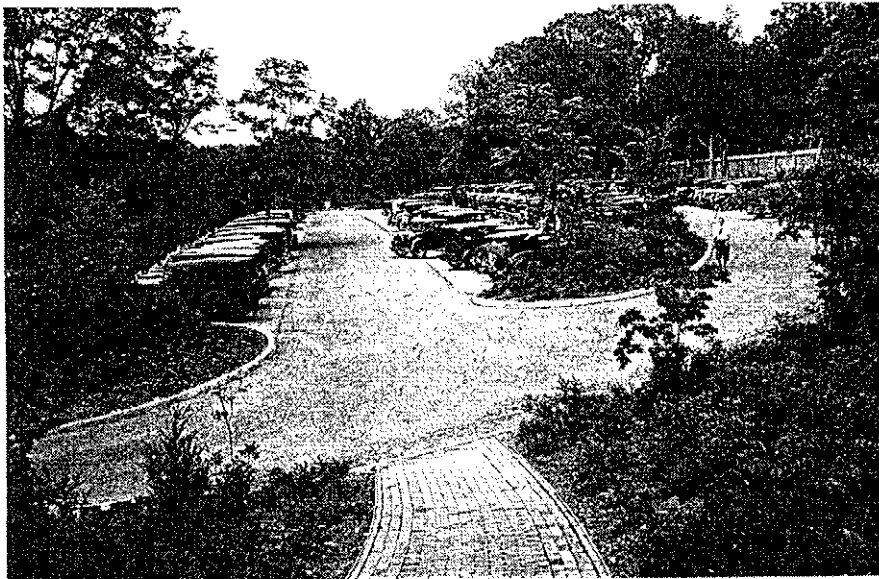
GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 280)



No. 1094. Concession Building at Mount Vernon



No. 1099. Circulating Roads & Car Parking Areas at Mt. Vernon

Figure 104 New parking area and terminus arrangements, June 1932 (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")



Figure 105 New loading and unloading arrangements at Mount Vernon terminus; new concession building in background, November 1932 (Mount Vernon Memorial Highway File #32-589, RG-30-N, NARA)

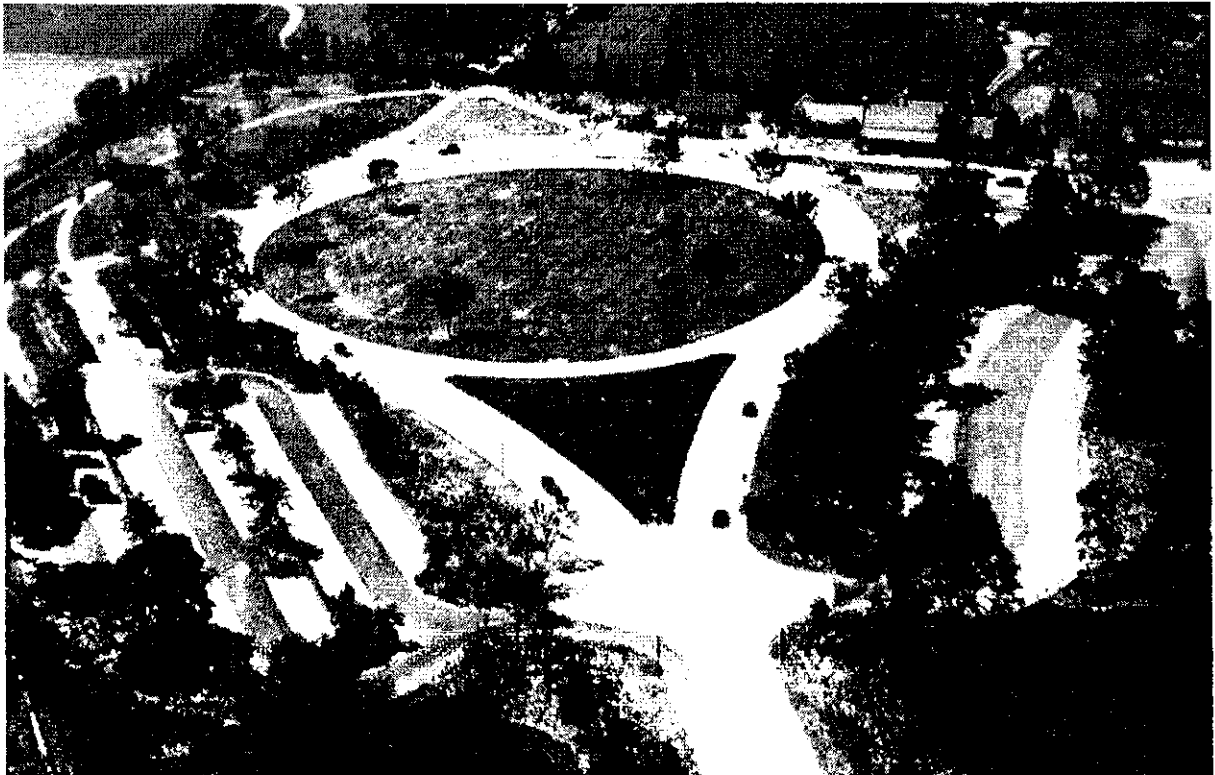
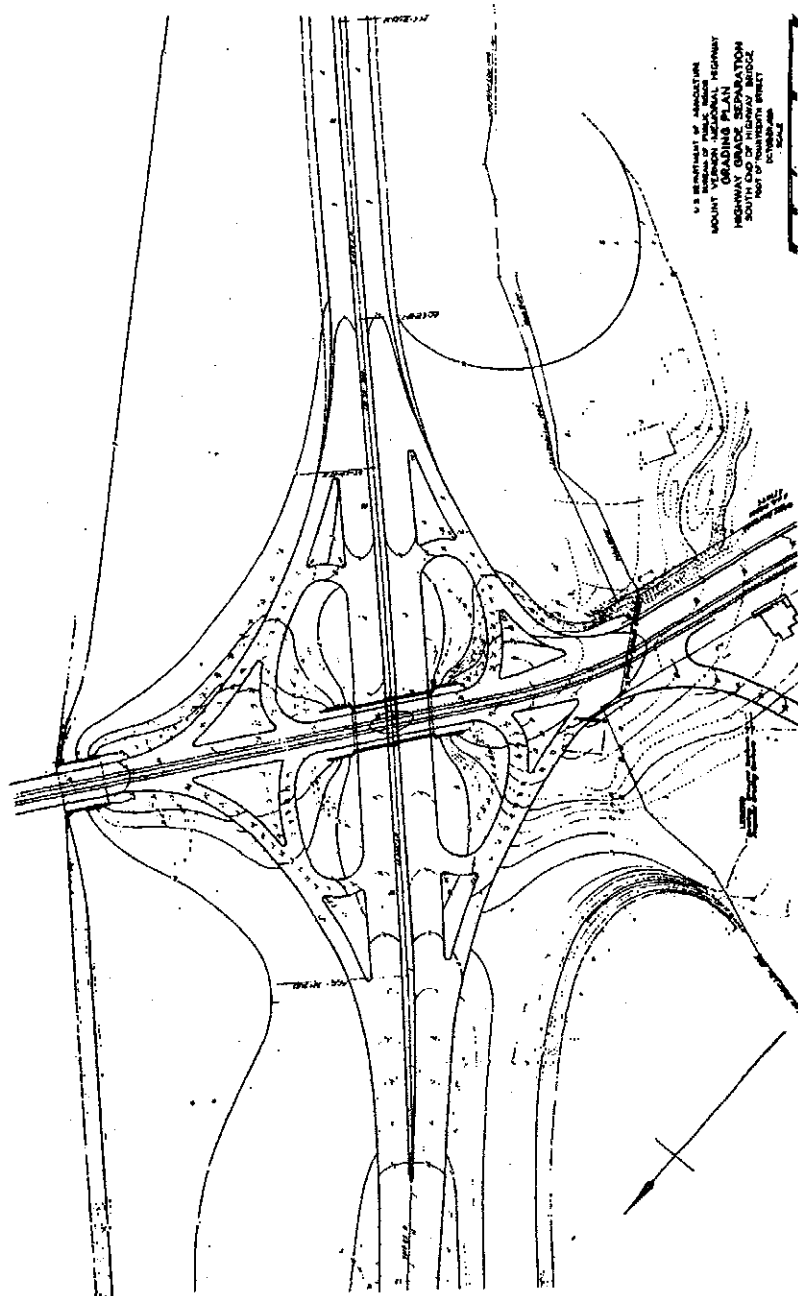


Figure 106 Aerial view of Mount Vernon terminus, July 1932 (Mount Vernon Memorial Highway File #32-172, RG-30-N, NARA)



Figure 107 Aerial view of cloverleaf interchange between memorial highway and U.S. Route 1, July 1932 (Simonson, "The Mount Vernon Memorial Highway Unit VI: Final Report: The Landscape Architectural Problems in its Development," U.S. Bureau of Public Roads, U.S. Department of Agriculture, 1932 [illustrated copy at U.S. Department of Transportation Library, Washington, D.C.])



U.S. DEPARTMENT OF ARMY
MOUNT VERNON MEMORIAL HIGHWAY
GRADING PLAN
HIGHWAY AND BRIDGE
SOUTH END OF THE POTOMAC RIVER
DISTRICT OF COLUMBIA

FIGURE 5.—Grading plan of the highway grade separation at the south end of the Highway Bridge across the Potomac River. The highway will pass under the present Alexandria road, and in order to make suitable connection with the Highway Bridge a system of ramps has been provided, which will permit the distribution of traffic in all directions without any left turns or cross traffic. Divided roadways are used approaching this grade separation. The island between the roadways serves as an effective means of preventing left turns and simplifies the scheme of circulation. Extra pavement width is provided on the Memorial Highway at the grade separation, so that traffic over the highway at all times will have clear, unobstructed right of way.

Figure 188 Grading plan for Highway Grade Separation, Mount Vernon Memorial Highway (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 285)

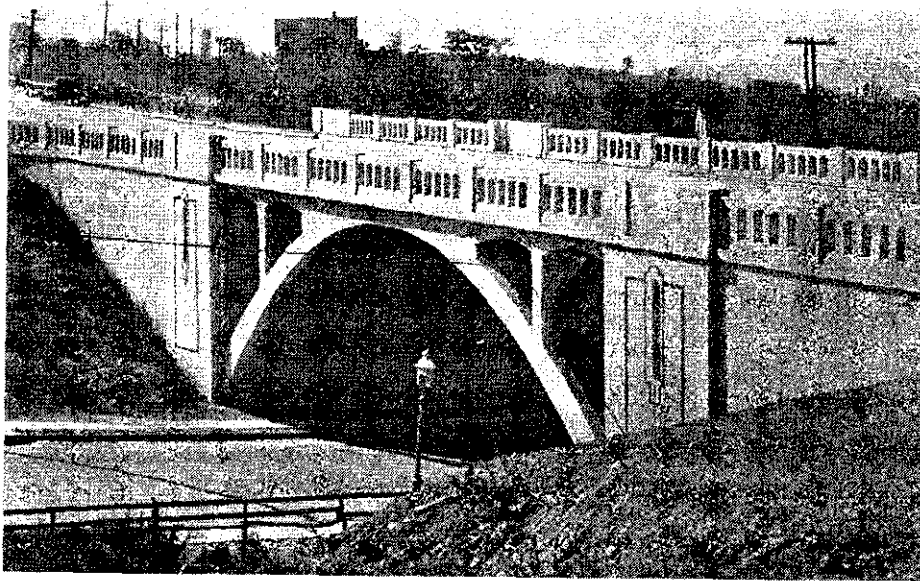


Figure 109 Exposed concrete parkway underpass, Saw Mill River Parkway, Yonkers, N.Y.; Arthur G. Hayden, engineer; Gilmore Clarke, architect (Westchester County Park Commission)

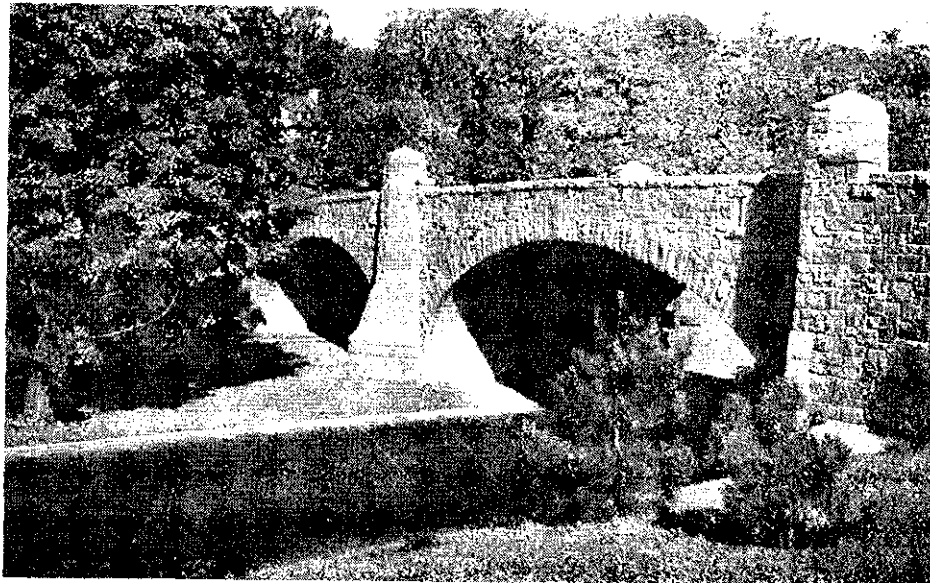


Figure 110 Classic stone-faced, rigid-frame concrete-arch parkway underpass and landscape setting, Mount Vernon, N.Y. (Westchester County Park Commission)

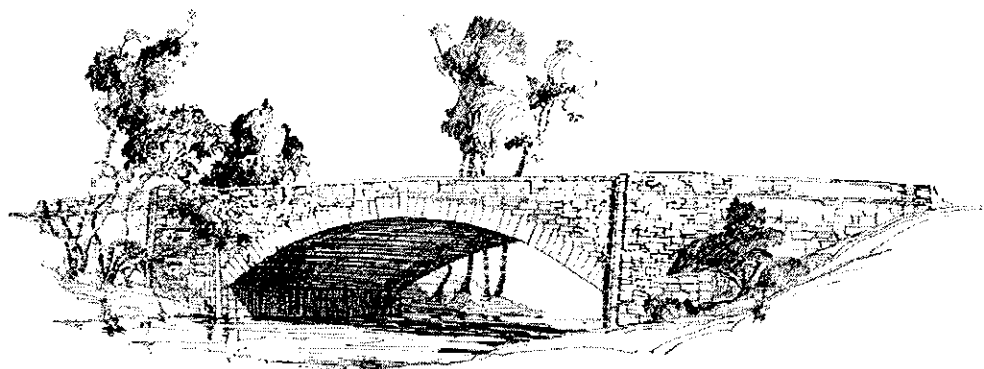


FIGURE 18.—Architectural elevation of bridge over Boundary Channel

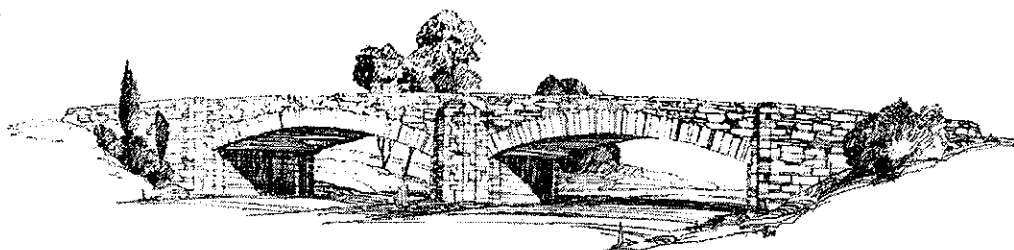


FIGURE 19.—Architectural elevation of underpass at south end of Highway Bridge

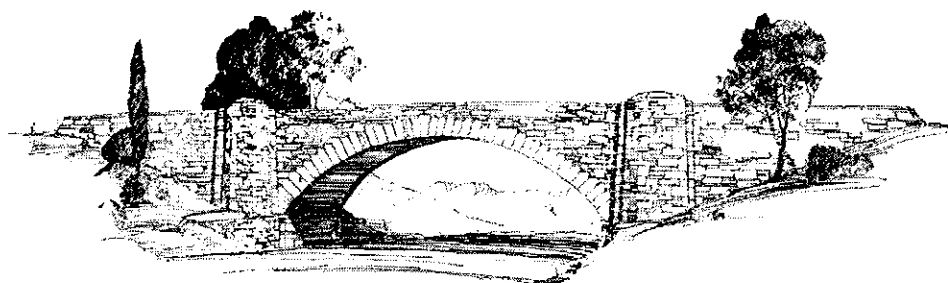


FIGURE 21.—Architectural elevation of overpass at proposed airport entrance

Figures 111-113

Architectural elevations of Boundary Channel Bridge, underpass at south end of Highway Bridge, and proposed Airport Overpass, drawings by Gilmore Clarke, 1929 (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 287)

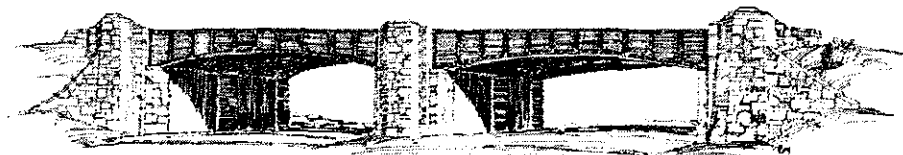


FIGURE 21.—Architectural elevation of underpass at the Richmond, Fredericksburg & Potomac Railroad

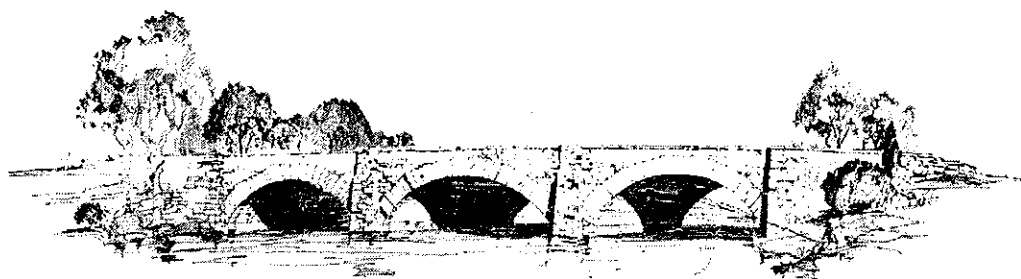


FIGURE 22.—Architectural elevation of bridge over Hunting Creek



FIGURE 23.—Architectural elevation of Wellington underpass

Figures 114-116

Architectural elevations of underpass at Richmond, Frederick & Potomac Railroad, bridge over Hunting Creek, and Wellington underpass drawings, by Gilmore Clarke, 1929 (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

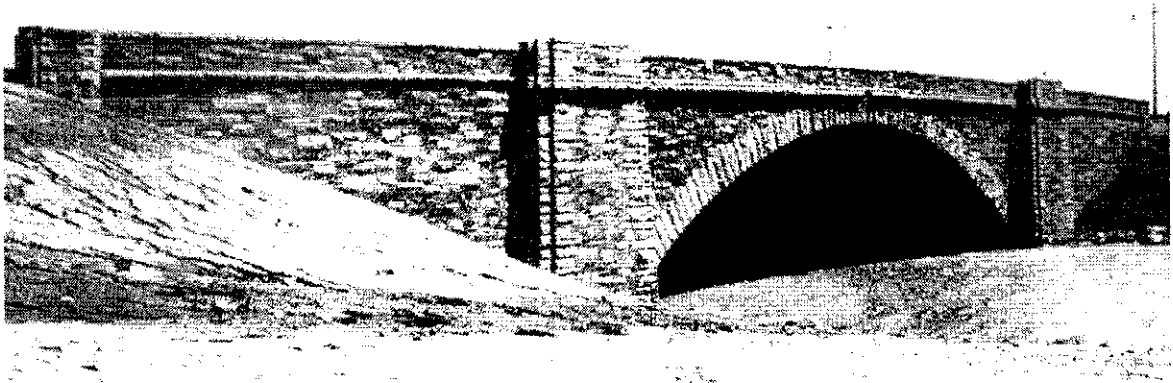


Figure 117A Boundary Channel Bridge (Mount Vernon Memorial Highway File #32-137, RG-30-N, NARA)

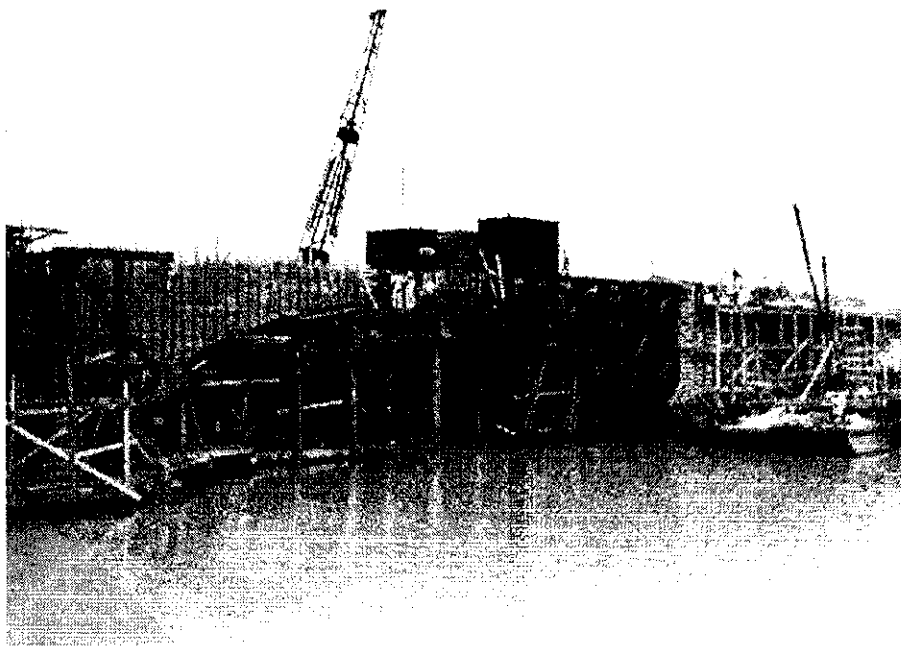


Figure 117B Boundary Channel Bridge under construction: note steel trusses later covered with stone (Mount Vernon Memorial Highway File #31-991, RG-30-N, NARA)

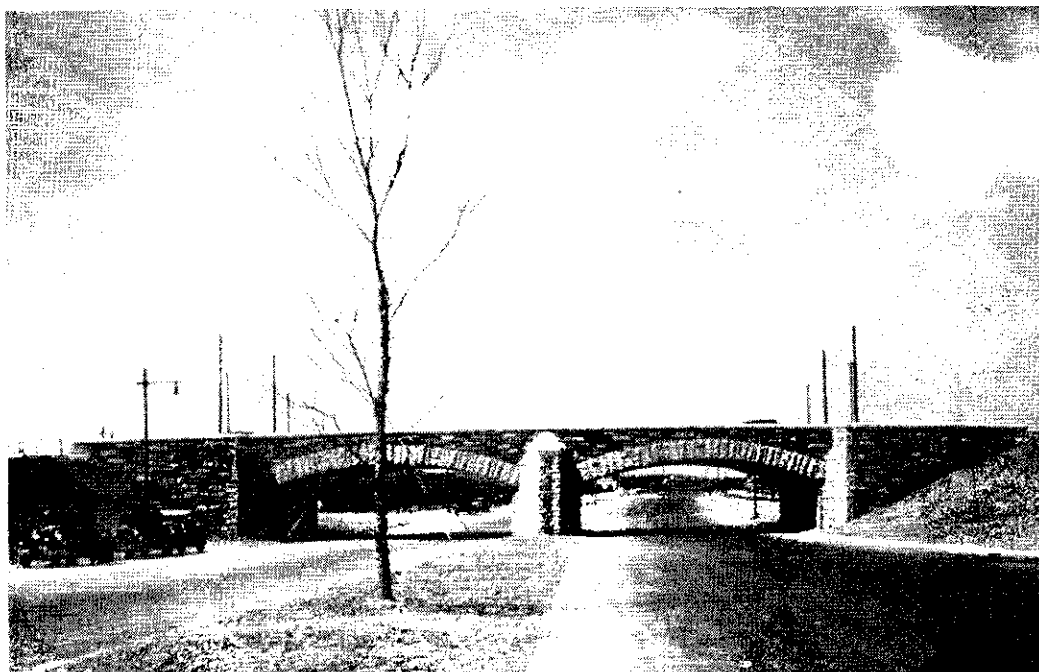


Figure 118 Cloverleaf grade separation south of U.S. Rte. 1 Highway Bridge (Mount Vernon Memorial Highway File #32-142, RG-30-N, NARA)

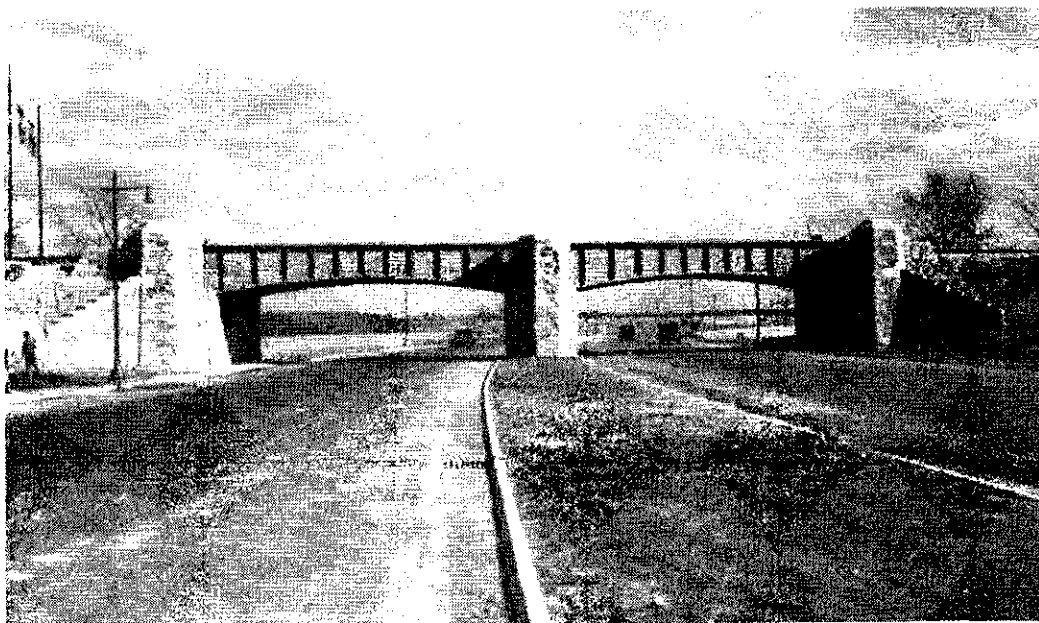


Figure 119 RF&P Railroad grade separation, 1932 (Mount Vernon Memorial Highway File #32-143, RG-30-N, NARA)

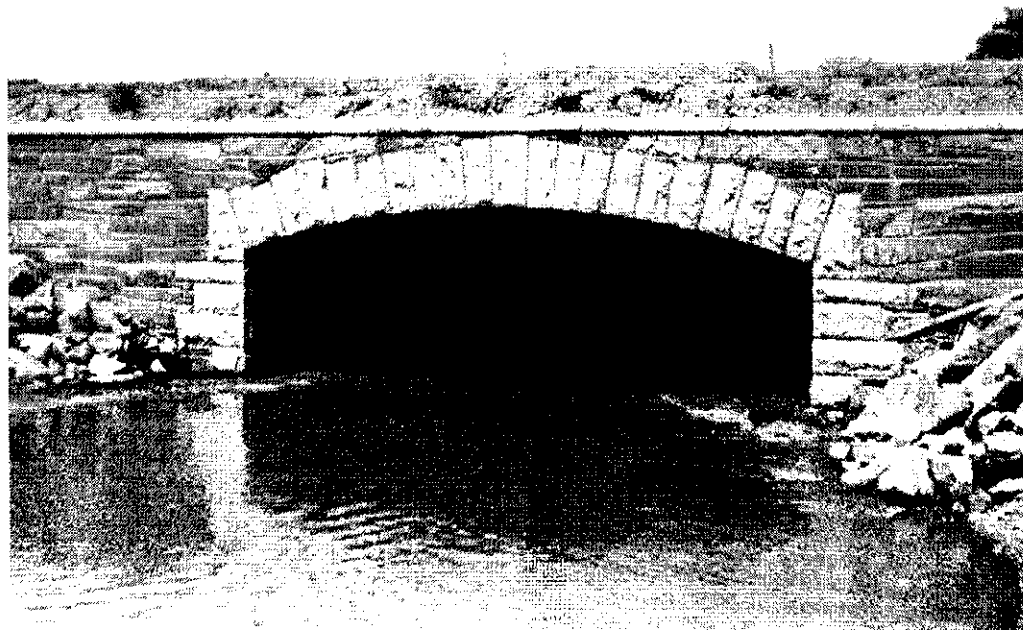


Figure 120 Roaches Run Bridge, July 1931 (Mount Vernon Memorial Highway File #31-1070, RG-30-N, NARA)



Figure 121 Overpass for proposed Airport entrance, March 1932 (Mount Vernon Memorial Highway File # 32-146, RG-30-N, NARA)

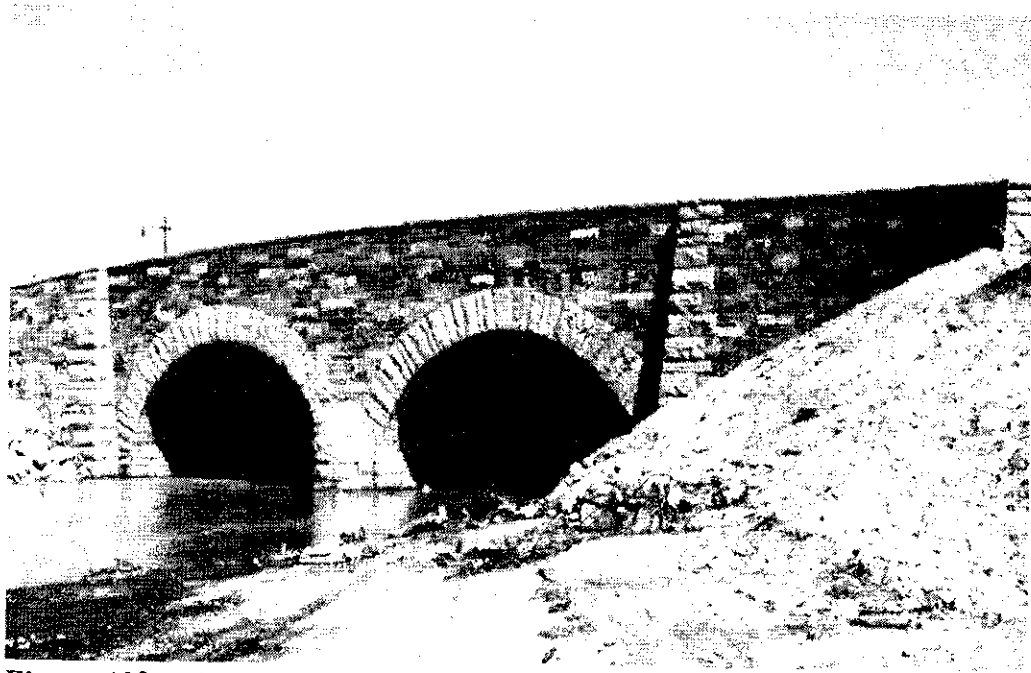


Figure 122 Four Mile Run Bridge, March 1932 (Mount Vernon Memorial Highway File, # 32-147, RG-30-N, NARA)



Figure 123 Southern Railway Overpass (Washington Street, Alexandria), 1931 (Mount Vernon Memorial Highway File # 31-1081A, RG-30-N, NARA)

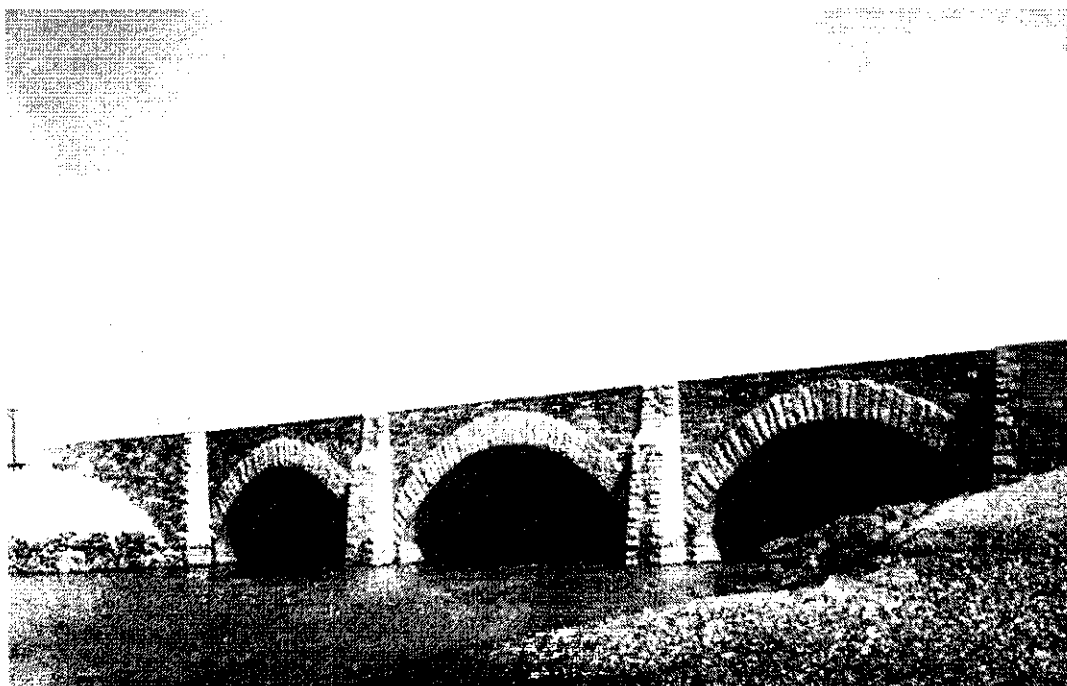


Figure 124 Great Hunting Creek Bridge, March 1932 (Mount Vernon Memorial Highway File # 32-151, RG-30-N, NARA)



Figure 125 Wellington Underpass, February 1932 (Mount Vernon Memorial Highway File # 32-154, RG-30-N, NARA)



Figure 126 Fort Hunt Overpass (Mount Vernon Memorial Highway File # 31-803, RG-30-N, NARA)



Figure 127 Little Hunting Creek Bridge, (Mount Vernon Memorial Highway File #32-157, RG-30-N, NARA)

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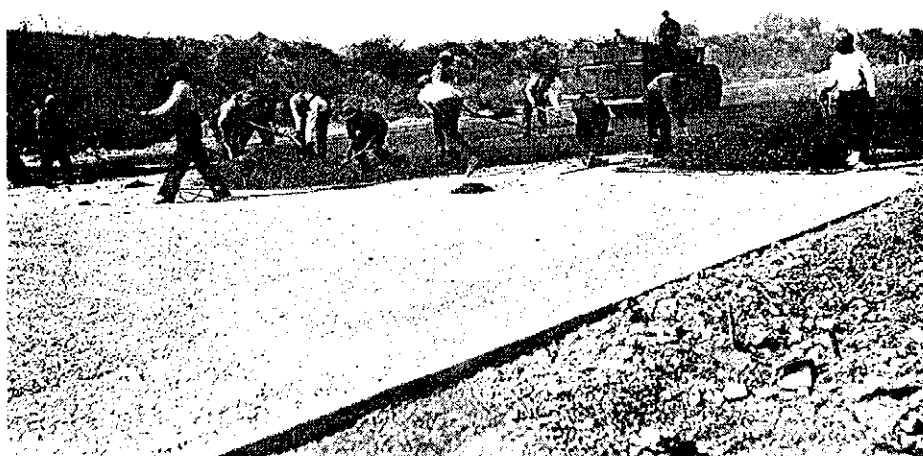
HAER No. VA-69

(Page No. 294)



No. 20.

Spreading Asphaltic Concrete Surface Course about Station 174.



No. 1.

Spreading Asphaltic Concrete Surface Course about Station 41 -
Columbia Island.

Figure 128 Laying bituminous asphaltic concrete pavement on
Columbia Island, November 1931 (Lee, "Final Report
for the Construction of the Mount Vernon Memorial
Highway")

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 295)



Figure 129 Laying first lane of reinforced concrete pavement near Capital Overlook, August 1931; note beginning of bituminous concrete pavement on filled land in background (Mount Vernon Memorial Highway File # 31-1151, RG-30-N, NARA)

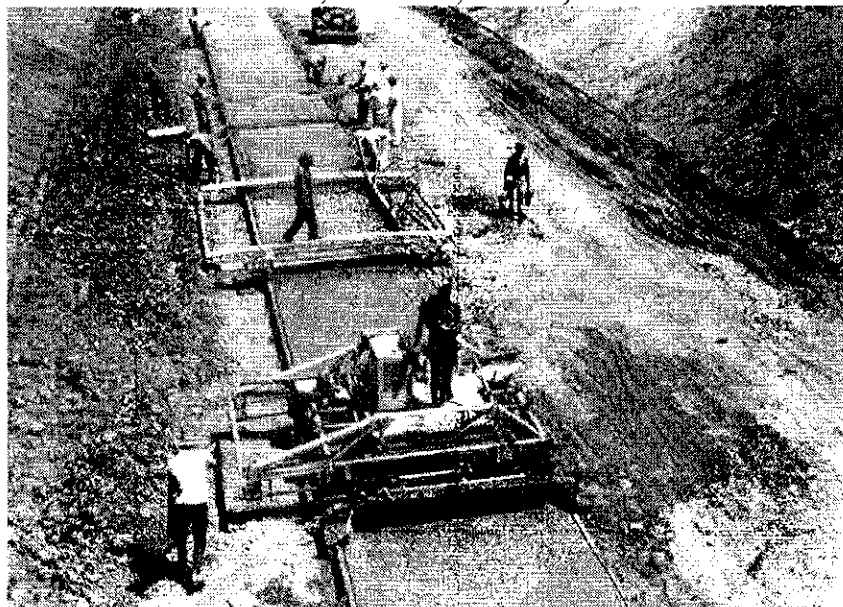
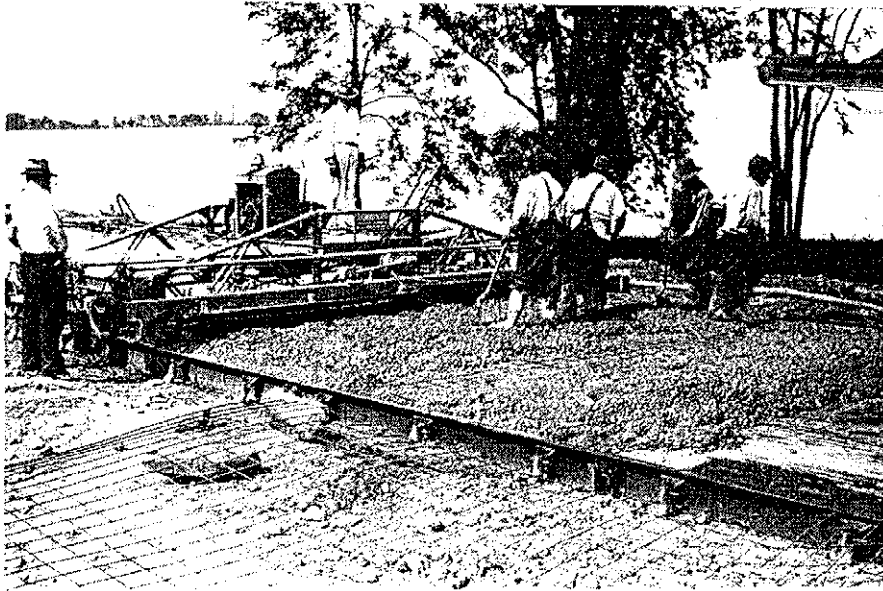


Figure 130 Laying reinforced concrete pavement near Wellington, July 1931 (Mount Vernon Memorial Highway File #31-1246, RG-30-N, NARA)

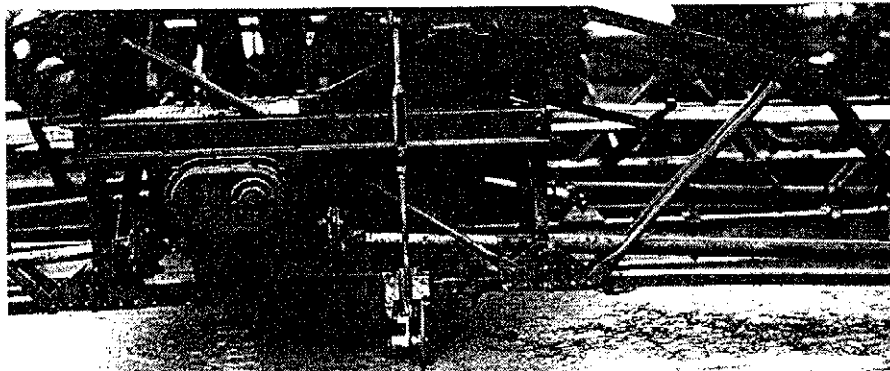
GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 296)

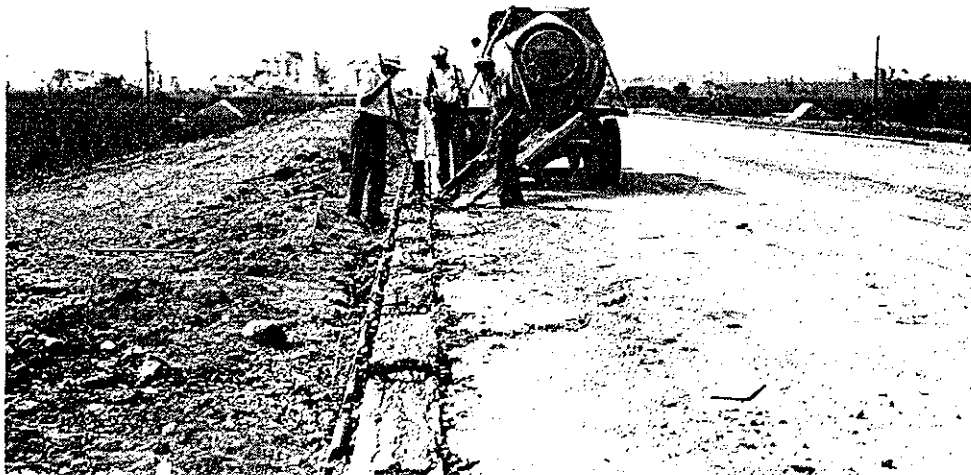


No. 41. Station 216 - Looking Northeast.



No 25.
Cutting Plane of Weakness Between 9 and 11-foot lanes on
20-foot slab.

Figure 131 Constructing reinforced concrete pavement (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")



No. 46. Building Concrete Curb About Station 250.



No. 12. Finishing Concrete Curb About Station 71.

Figure 132 Constructing concrete curb (Lee, "Final Report for the Construction of the Mount Vernon Memorial Highway")



Figure 133 Standard rustic timber guard rail (Mount Vernon Memorial Highway File #32-165, RG-30-N, NARA)

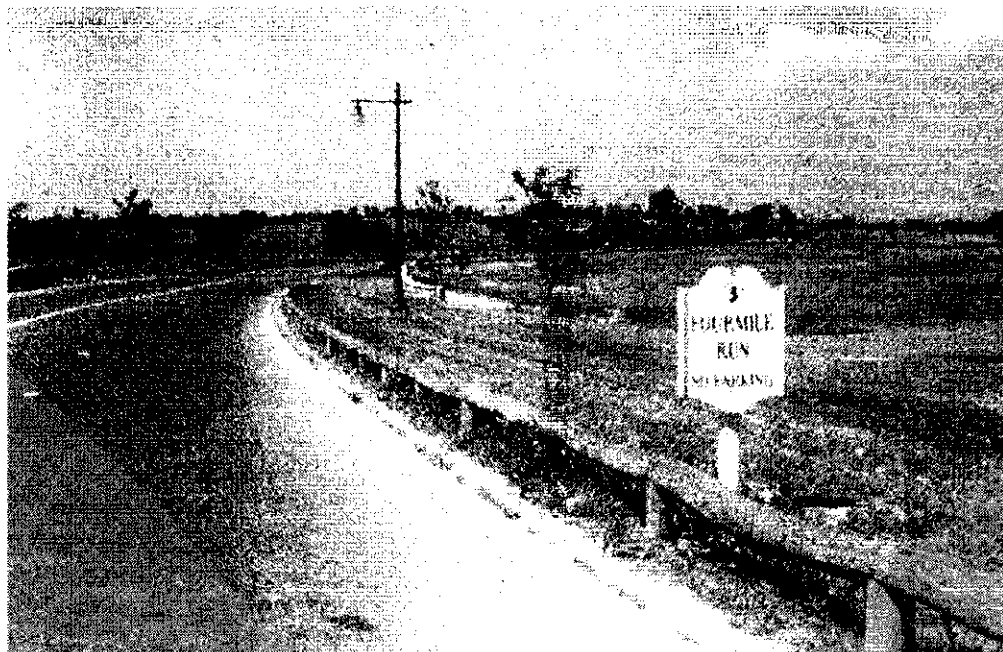


Figure 134 Low timber rail used primarily to prevent roadside parking (Mount Vernon Memorial Highway File #32-159, RG-30-N, NARA)



Figure 135 View of Mount Vernon Memorial Highway showing spiral curvature, superelevation, rustic lightpoles, and rustic guardrails (Mount Vernon Memorial Highway File #32-166, RG-30-N, NARA)



Figure 136 Mount Vernon Memorial Highway, note metal light standards used near Washington (Mount Vernon Memorial Highway File #32-535, RG-30-N, NARA)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 300)

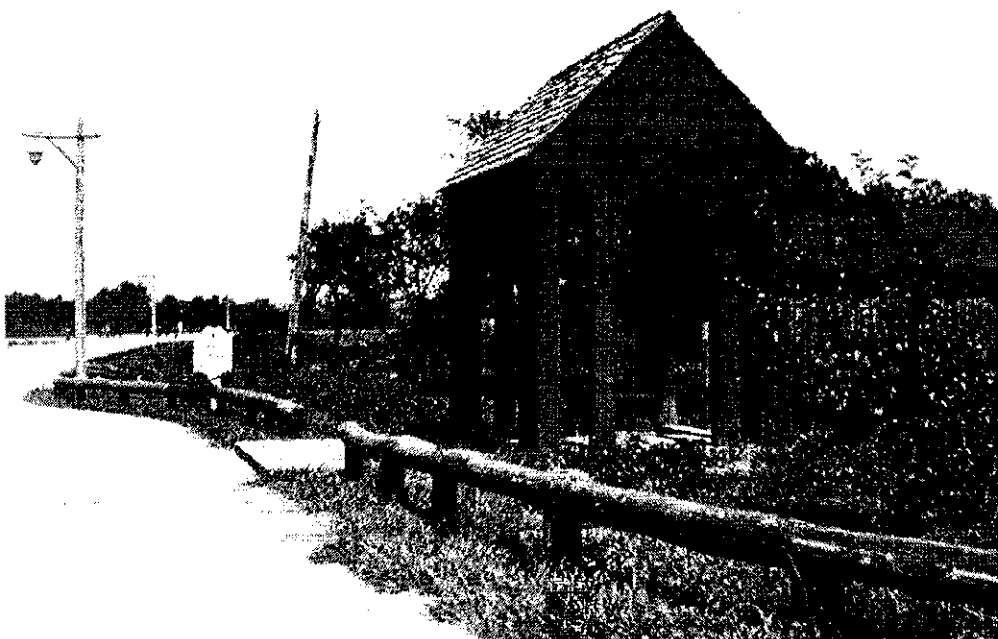


Figure 137 Rustic bus shelter, lighting fixture, and guard rail, near Bell Haven (Mount Vernon Memorial Highway File #32-581, RG-30-N, NARA)



Figure 138 Original "Colonial Revival"- style sign, Mount Vernon Memorial Highway, 1932 (Mount Vernon Memorial Highway File #32-576, RG-30-N, NARA)



Figure 139 "Descendent" of Cambridge, Massachusetts's
"Washington Elm," Mount Vernon terminus (Mount
Vernon Memorial Highway File #32-569, RG-30-N,
NARA)



Figure 140 Monument marking United Daughters of the Confederacy memorial tree planting, near Collingwood (Mount Vernon Memorial Highway File #32-575, RG-30-N, NARA)



Figure 141 Monument marking National Society of Colonial Dames memorial tree planting, originally located at Capital Overlook; relocated to Hillcrest Overlook due to construction of National Airport (Mount Vernon Memorial Highway File #32-559, NARA)

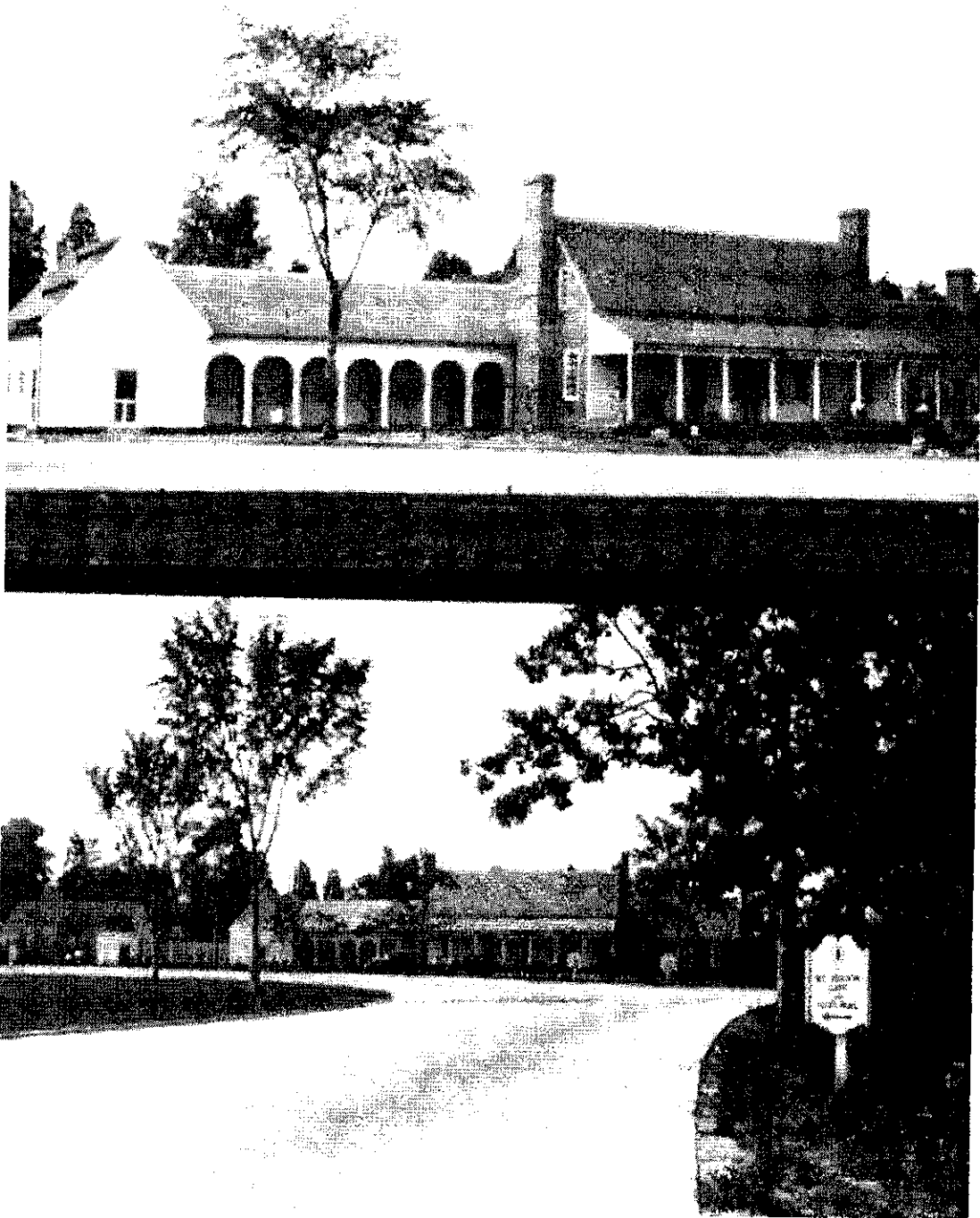


Figure 141 Colonial Revival concession stand at Mount Vernon terminus;
Edward W. Donn, Jr., architect (Mount Vernon Memorial
Highway File #31-1402 [top] & #32-245 [bottom], RG-30-N,
NARA)



Figure 142 Mount Vernon Memorial Highway, 1937 view (Mount Vernon Memorial Highway File #37-505, RG-30-N, NARA)



Figure 143 Completed highway near Dyke Marsh; original Simonson caption called attention to rustic guard rails and light pole, "colonial" type traffic sign, "lovely enframing trees," and "delightful view of Washington Monument over ten miles away" (Mount Vernon Memorial Highway File #32-187, RG-30-N, NARA)



Figure 144 Motorists enjoying newly completed Mount Vernon Memorial Highway (Mount Vernon Memorial Highway File #32-200, RG-30-N, NARA)



Figure 145 Mount Vernon Memorial Highway, along waterfront south of Collingwood area (Mount Vernon Memorial Highway File #32-161, RG-30-N, NARA)

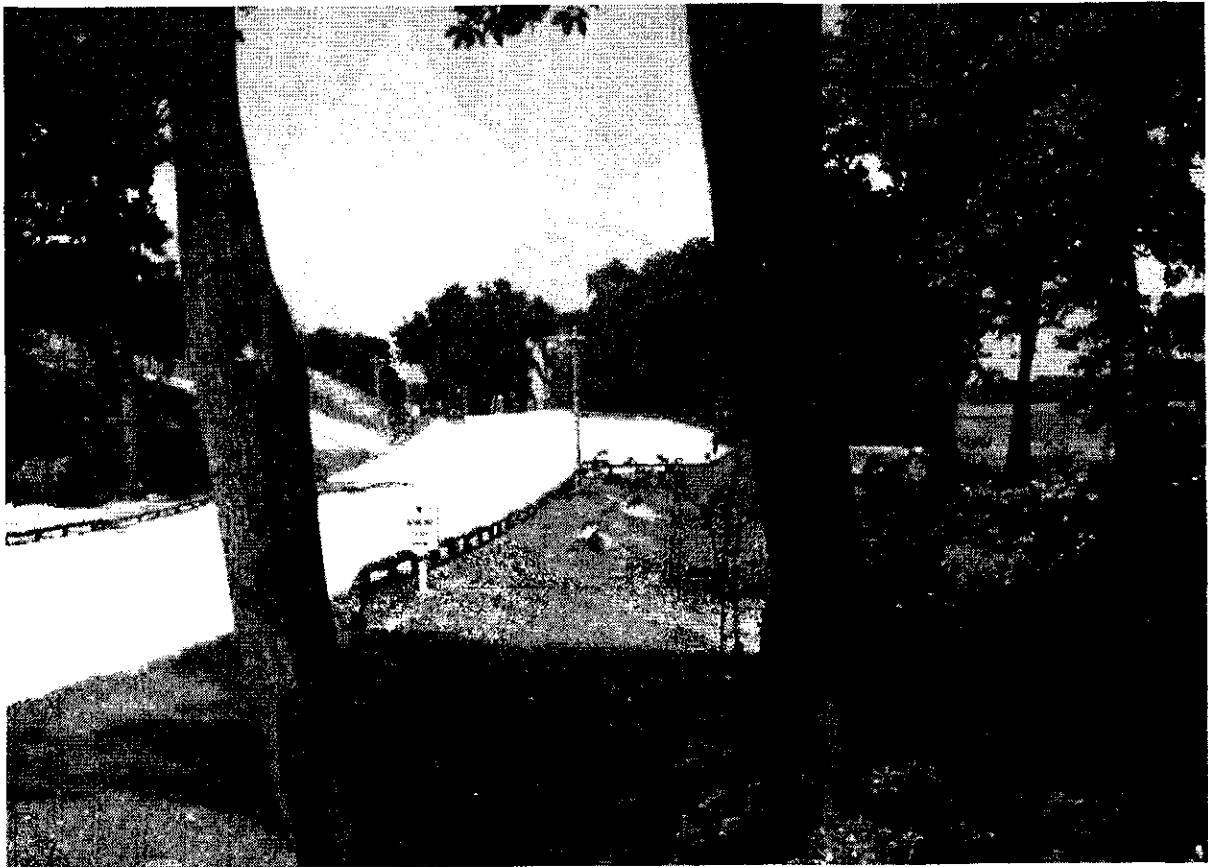
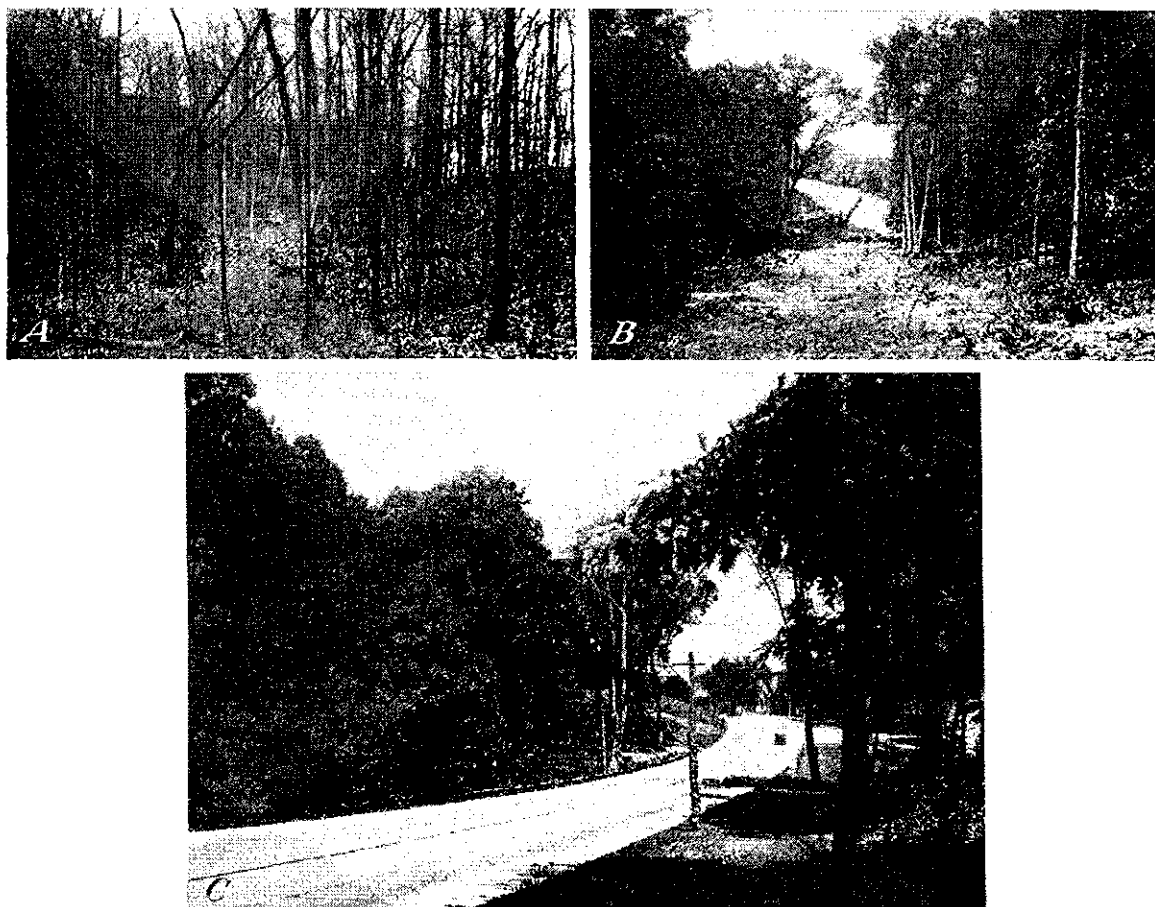


Figure 146 Woodland Valley parking overlook; Simonson caption emphasized harmonious integration of various features (Mount Vernon Memorial Highway File #32-162, RG-30-N, NARA)

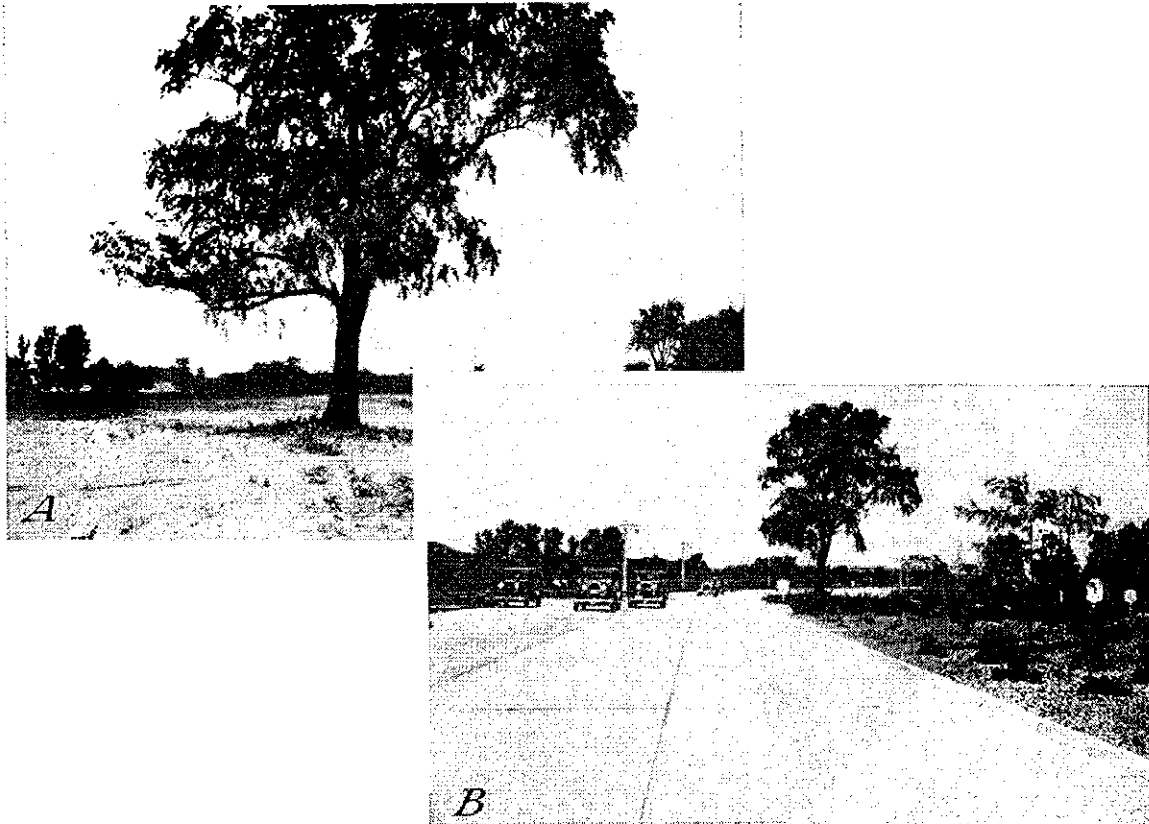


Figure 147 Memorial highway passing through wooded section improved through pruning and thinning, April 1932; Simonson caption emphasizes "the fine results obtained when the road is fitted naturally to the existing topography." (Mount Vernon Memorial Highway File #32-168, RG-30-N, NARA)



STAGES IN TRANSITION FROM A TANGLED WOODLAND TO AN ATTRACTIVE ROADSIDE. NATURALNESS IS THE KEYNOTE OF THIS TREATMENT.

Figure 148 Landscape treatment of Mount Vernon Memorial Highway; original caption reads, "Stages in the transition from a tangled woodland to an attractive roadside. Naturalness is the keynote of this treatment" (U.S. Department of Agriculture, Roadside Improvement; U.S. Department of Agriculture Miscellaneous Publication No. 191 [Washington, D.C.: Government Printing Office, 1934])



A, FINE SPECIMEN TREE SAVED TO BEAUTIFY THE ROAD. IN B, GROUND COVER PLANTS ARE BECOMING ESTABLISHED ON THE AREA AT THE RIGHT AND WILL MAKE A MASS OF GREEN THROUGHOUT THE YEAR.

Figure 149 Preserving attractive trees to improve appearance of highway (Roadside Improvement)

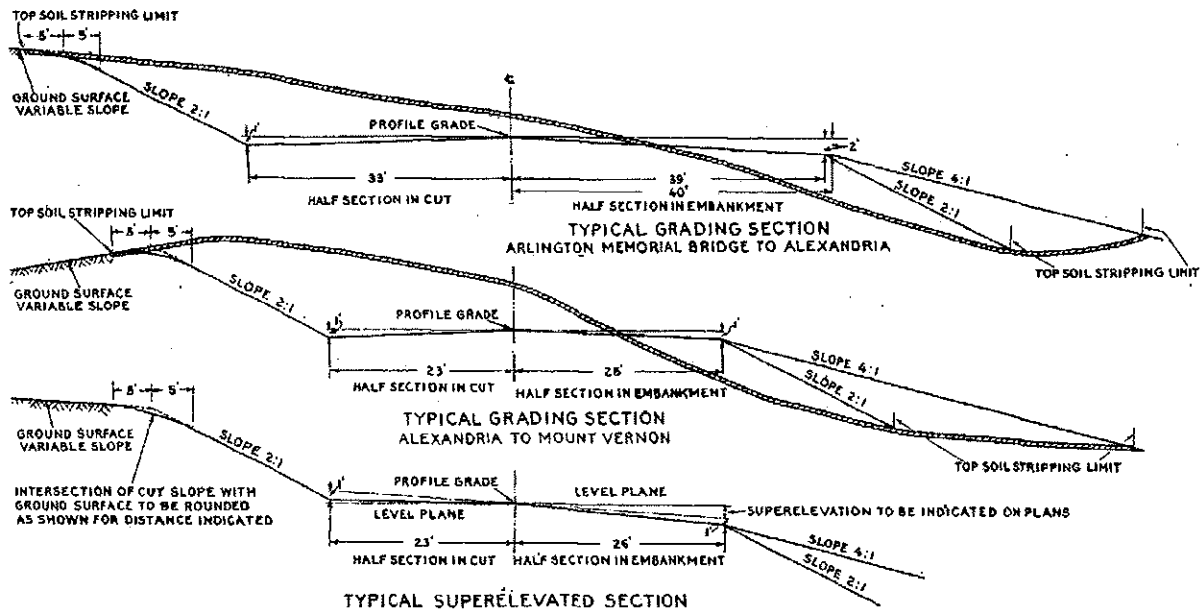


FIGURE 2.—Typical sections for the land grading. Three level sections have been used of such width and cross slope that a lateral movement of the earth excavated for the subgrade will provide a sufficient amount of material for the proper slope of the shoulders. Provision has been made for stripping suitable top soil and storing it beyond the limits of the slope stakes so that it can be used to cover the shoulders and slopes.

Figure 150 Typical grading sections for Mount Vernon Memorial Highway (The Mount Vernon Memorial Highway: History, Design, and Progress in Construction)

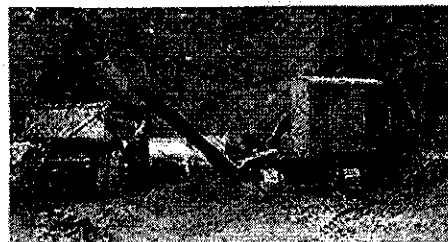
METHODS OF EXECUTION OF LANDSCAPE WORK

There are two possible plans of carrying on preparation and planting operations as described below. Plan A is recommended as likely to produce the most satisfactory results.

Plan A.—The purchase (furnishing and delivery only) of nursery-grown plant materials on the basis of specifications as described above through contracts awarded after receiving competitive bids. The actual planting to be done by State forces (maintenance or special landscape gangs) under the direction of superintendents with actual experience and training in the work. This has been the usual practice in the past and considerably simplifies preliminary office work and the making of adjustments in the field operations to meet local conditions. Nurseries specialize in growing materials and usually do not undertake planting at a distance from the growing grounds.

Plan B.—The actual furnishing of plants and materials, delivery and planting to be done under contract according to plans and specifications and strict supervision of State landscape personnel. Contracts should specify the furnishing of all materials such as tree stakes, fertilizers, humus, and tools as well as plants. It is difficult to work under this plan as so many varying fac-

tors enter into the work. It is difficult also to find contractors with satisfactory experience.



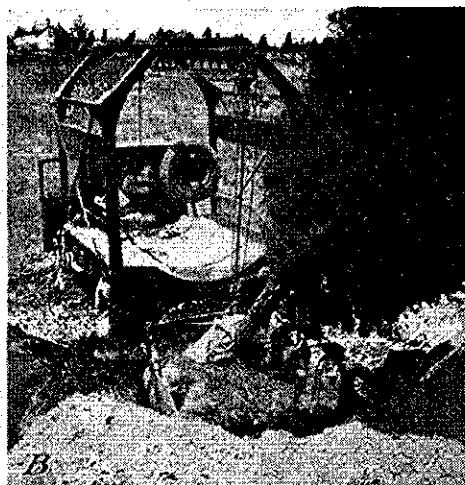
BEFORE THE MAIN GRADING OPERATIONS THE TOPSOIL IS STRIPPED AND TRANSPORTED TO STORAGE PILES. LATER IT WILL BE DISTRIBUTED TO SUPPORT GROWTH ON BARE CUTS AND FILLS.



TOPSOIL, STRIPPED FROM ROADWAY AND STORED FOR LATER USE.



TRANSPLANTING TREES FROM THE AREA TO BE OCCUPIED BY THE ROADWAY. WITH PROPER EQUIPMENT TREES OF CONSIDERABLE SIZE CAN BE READILY MOVED. THE FINE CEDAR SHOWN IN B IS WELL WORTH TRANSPLANTING.



{ 27 }

Figure 151 Mount Vernon Memorial Highway landscape development practices: preserving topsoil and transplanting trees from path of highway (Roadside Improvement)



Figure 152 Planting large trees in Columbia Island/Columbia Basin vicinity (Mount Vernon Memorial Highway File, RG-30-N, NARA)



Figure 153 Transplanting native Virginia cedar with special hoist truck, Collingwood vicinity, May 1930 (Mount Vernon Memorial Highway File #30-98, RG-30-N, NARA)



AN INFORMAL ARRANGEMENT OF CEDARS. SOME OF THESE ARE NATURAL GROWTH. OTHERS HAVE BEEN TRANSPLANTED FROM THE ROADWAY OR NEARBY LOCATIONS.

Figure 154 Planting arrangements in Collingwood vicinity; original caption reads, "An informal arrangement of cedars. Some of these are natural growth. Others have been transplanted from the roadway or nearby locations." (Roadside Improvement)

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Figure 155 American Highways cover illustration of American Association of State Highway Officials at Mount Vernon Memorial Highway dedication services (American Highways 12 [January 1933])

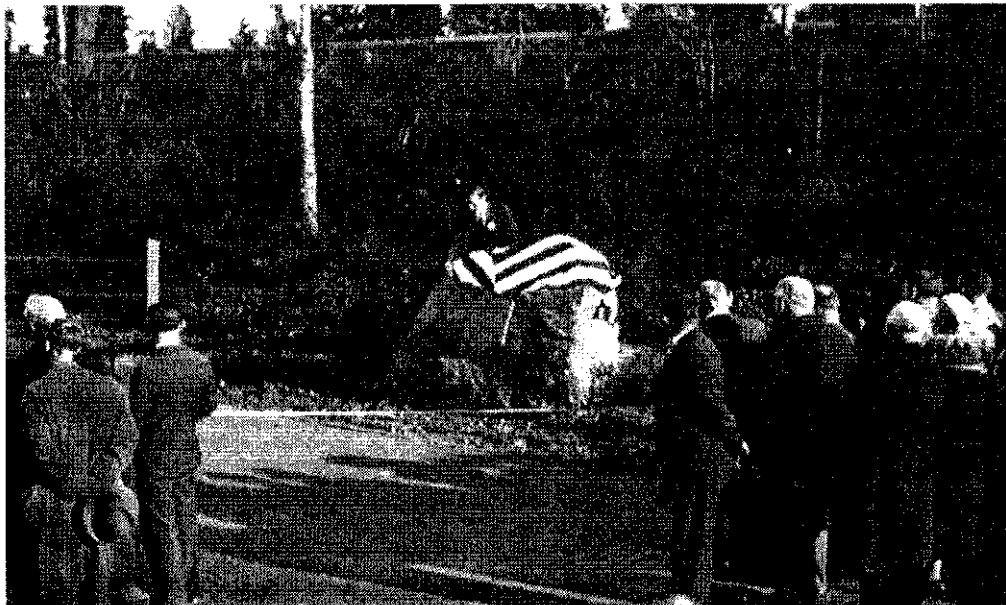


Figure 156 Landscape architect Wilbur Simonson removing flag from boulder bearing ceremonial plaque (Mount Vernon Memorial Highway File #32-602, RG-30-N, NARA)



Figure 157 Daughter of D.A.R. official sprinkling earth from Washington-related sites at foot of ceremonial boulder (Mount Vernon Memorial Highway File #32-590, RG-30-N, NARA)

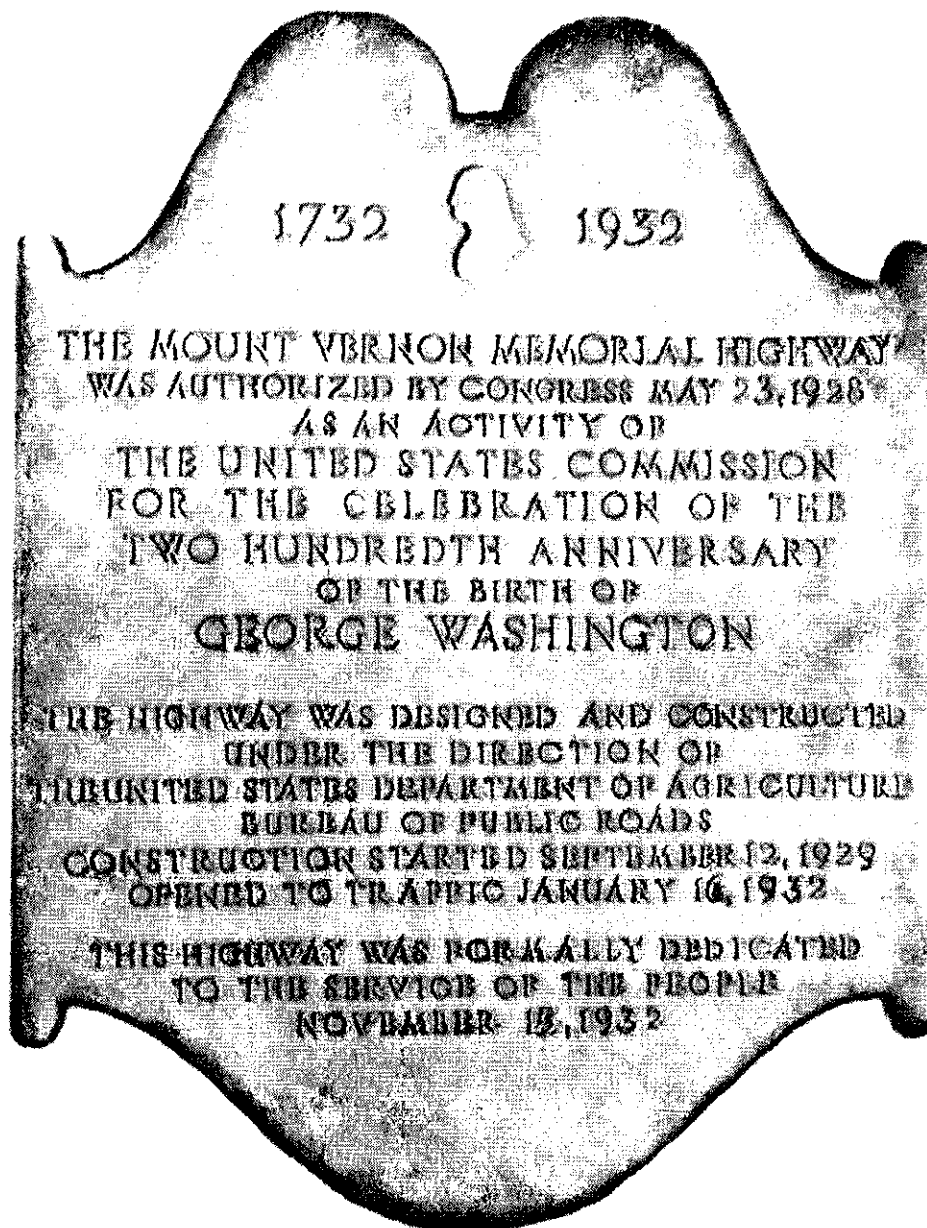


Figure 158 Mount Vernon Memorial Highway dedication plaque, 1932 (Mount Vernon Memorial Highway File #32-554, RG-30-N, NARA)

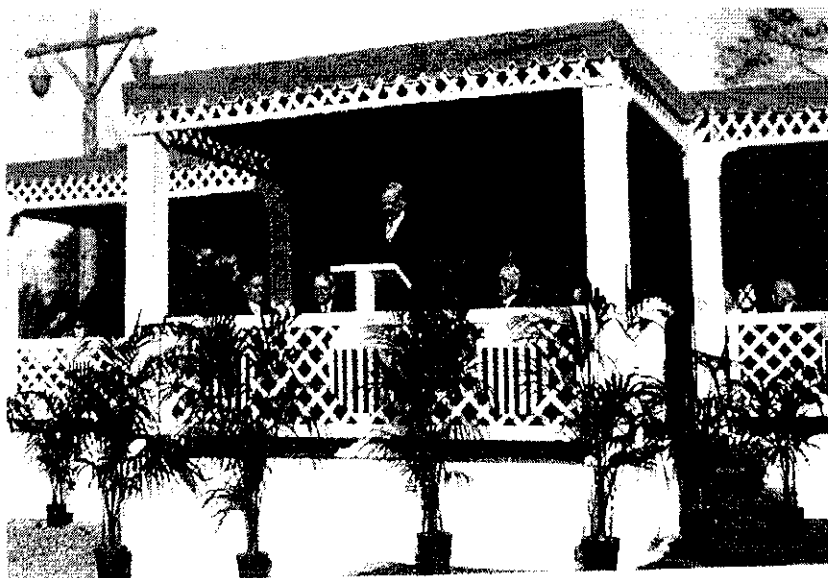


Figure 159 Secretary of Agriculture Arthur M. Hyde delivering speech at dedication ceremony, November 15, 1932 (Mount Vernon Memorial Highway File #32-591, RG-30-N, NARA)

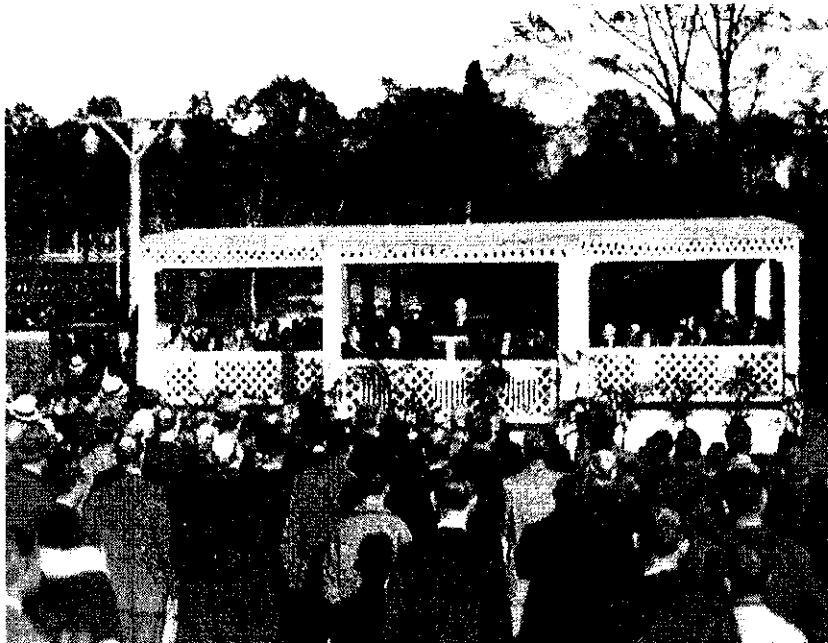


Figure 160 Sen. Simeon Fess, Vice-Chairman of Bicentennial Commission, delivering speech at dedication ceremony, November 15, 1932 (Mount Vernon Memorial Highway File #32-601, RG-30-N, NARA)

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Figure 161 American Motorist cover illustration (March 1932)

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Figure 162 "What Could Be A Finer Tribute to Washington's Memory?"
American Motorist-District of Columbia Edition (June 1930)

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Figure 163 Illustration from "The Mt. Vernon Memorial Highway" (American Motorist 6 [April 1932])

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Figure 164 "The Mount Vernon Memorial Highway: Most Modern Motorway, Designed as Memorial to Country's First President, Now Under Construction," American City 43 (October 1930)

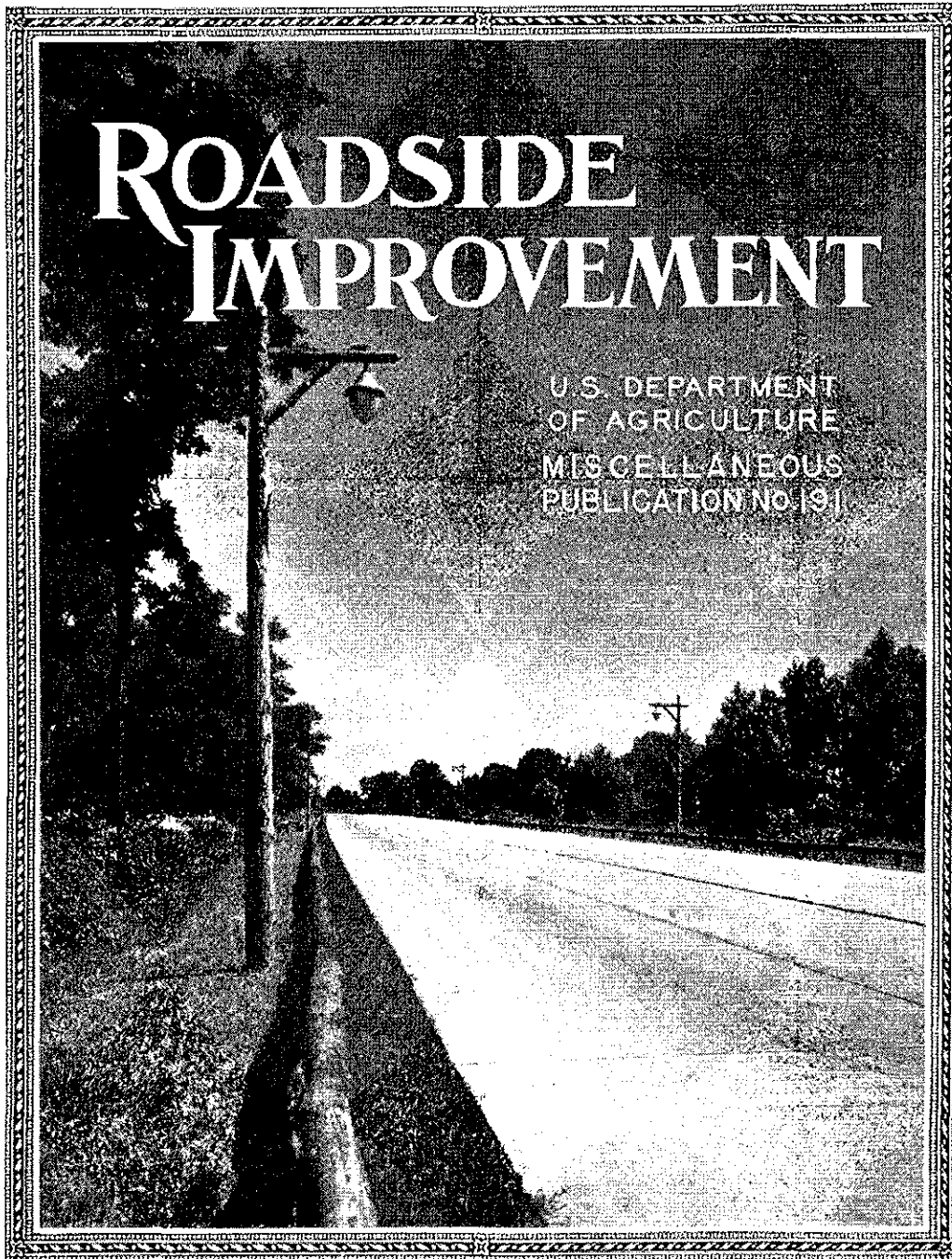
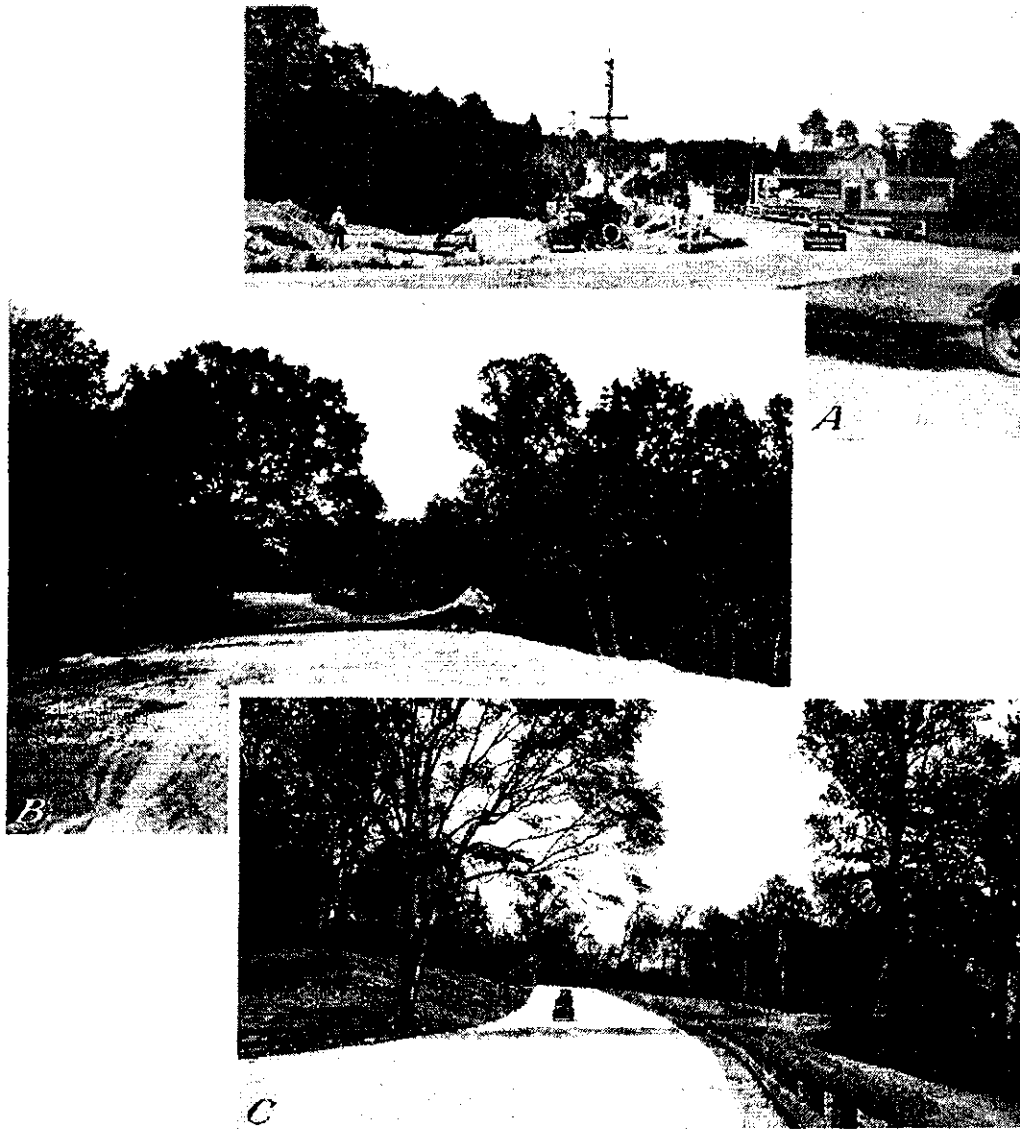


Figure 165 U.S. Department of Agriculture, Roadside Improvement; U.S. Department of Agriculture Miscellaneous Publication No. 191 (Washington, D.C.: Government Printing Office, 1934)

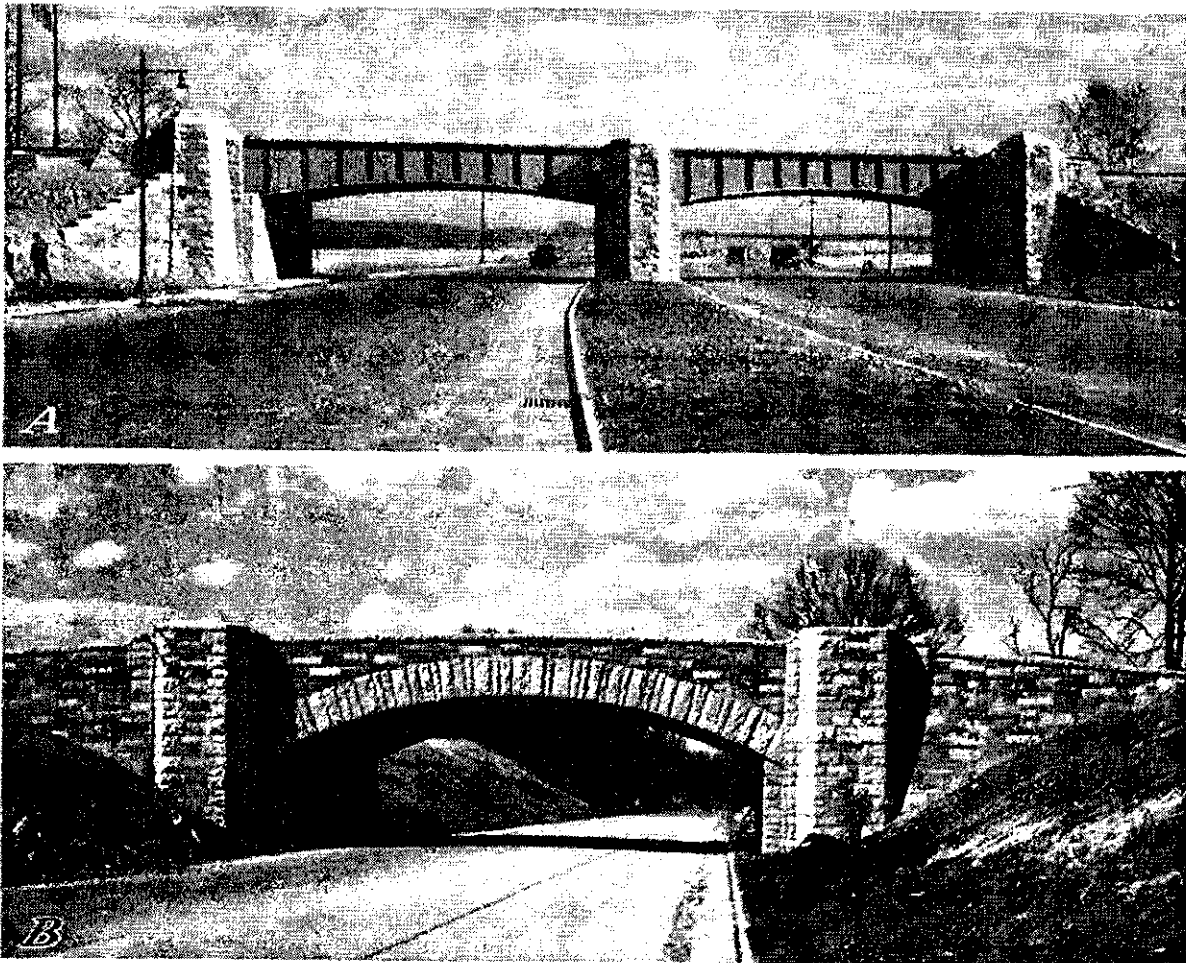
GEORGE WASHINGTON MEMORIAL PARKWAY
HAER No. VA-69
(Page No. 323)



A. THE APPROACH TO WASHINGTON OVER THE OLD ROAD FROM THE SOUTH. B. VIRGIN TERRITORY WITHIN A SHORT DISTANCE OF THE FIRST PICTURE AND ON THE NEW LOCATION OF THE MOUNT VERNON MEMORIAL HIGHWAY. C. THE COMPLETED HIGHWAY AT SAME LOCATION NOW USED BY PASSENGER VEHICLES APPROACHING WASHINGTON.

[2]

Figure 166 Mount Vernon Memorial Highway as model motorway development (Roadside Improvement)



BRIDGES DESIGNED TO BE IN HARMONY WITH LANDSCAPED SURROUNDINGS. GRADING AND LANDSCAPING NOT YET COMPLETED.

Figure 167 Mount Vernon Memorial Highway as model for highway grade separations
(Roadside Improvement)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 325)

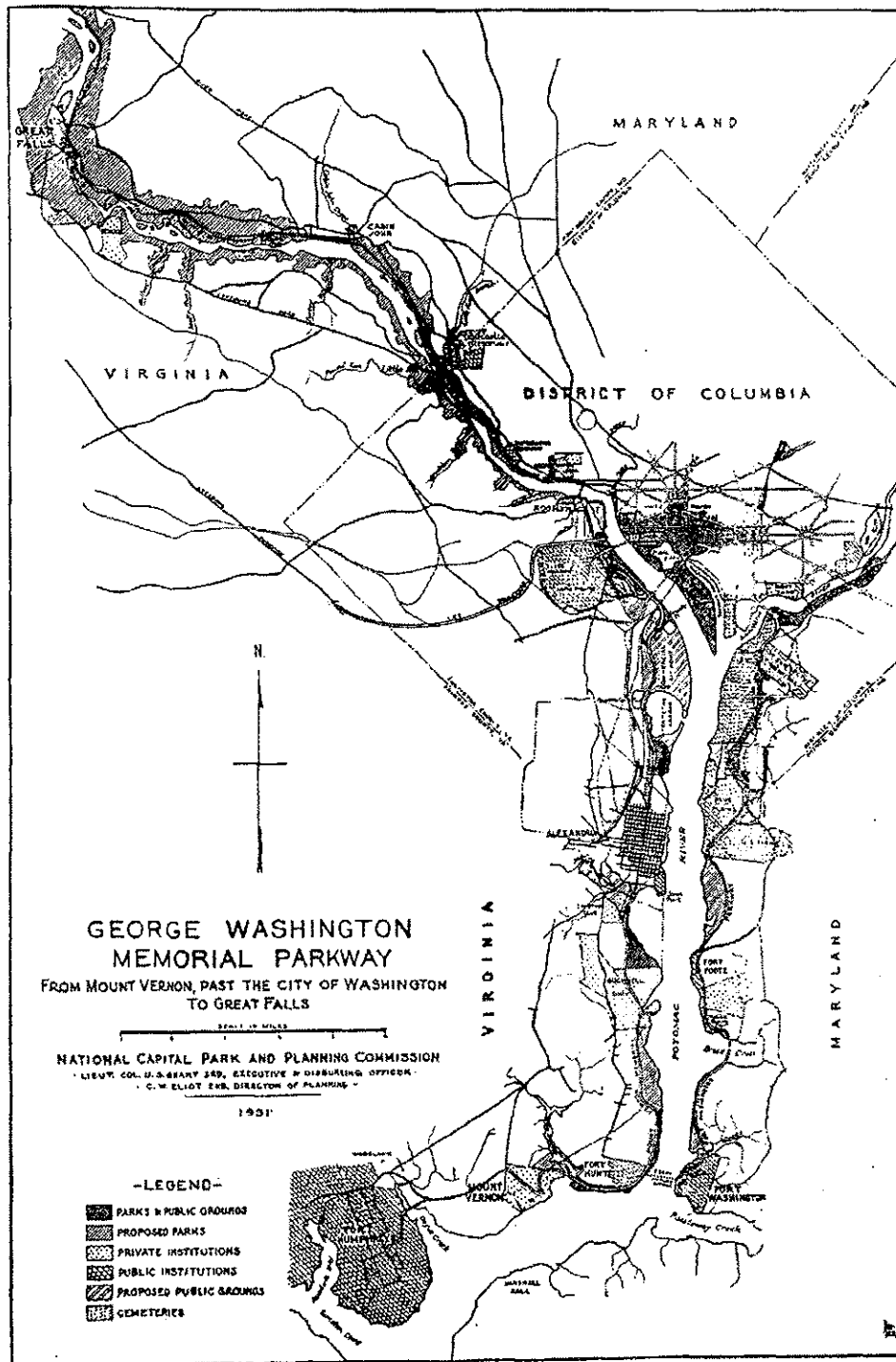


Figure 168 George Washington Memorial Parkway development plan, 1931 (Annual Report of the National Capital Park and Planning Commission, 1931)

GEORGE WASHINGTON MEMORIAL PARKWAY

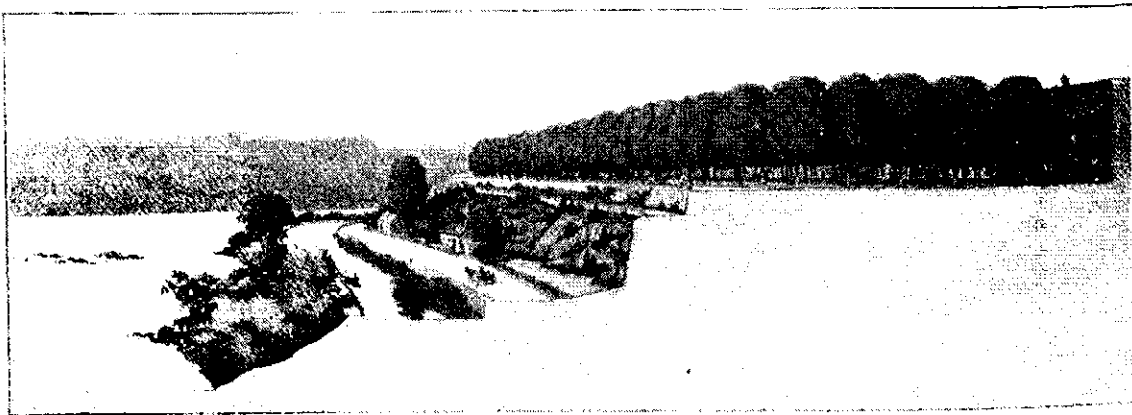
HAER No. VA-69

(Page No. 326)



No. 16.—Typical section of Potomac Drive below the Chain Bridge.

Figure 169 Senate Park Commission proposal for parkway along Potomac above Washington, 1901 (The Improvement of the Park System of the District of Columbia)



No. 14.—Typical section of Potomac Drive, a short distance above Aqueduct Bridge.

Figure 170 Senate Park Commission proposal for parkway along Potomac above Washington, 1901 (The Improvement of the Park System of the District of Columbia)

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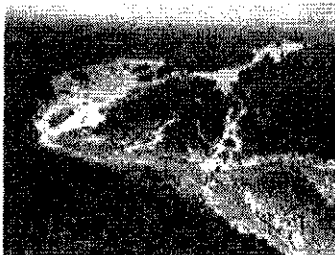
(Page No. 327)



*Potomac Canal Lock, Great Falls, Virginia
Built under direction of President Washington, 1786*

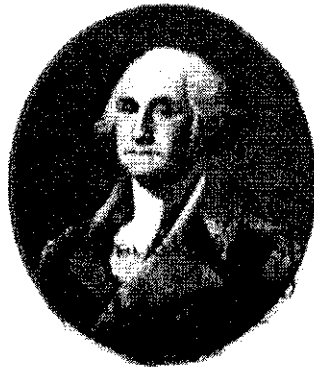


*Lock of C. & O. Canal, Cabin John, Maryland
Work started by President J. R. Adams, 1828*



Great Falls of the Potomac

George Washington Memorial Parkway



"The Potomac has two kinds of beauty: the beauty of the upper stream, surrounding every rocky bed between high heights crowned with wood, and the beauty of the wide stream, spread out like a lake below the city into a vast sheet of silver." — Bryce.

Within 150 miles of over 5,000,000 people.

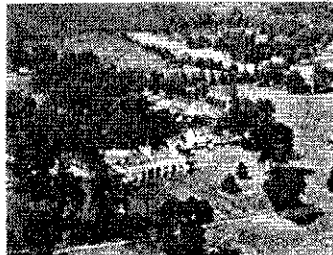
National Capital Park and Planning
Commission
1930



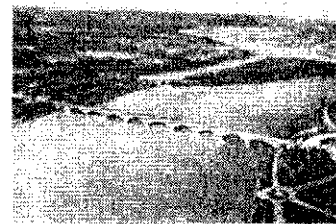
*Fall at the Mouth of Scott Run, Virginia
Typical of many Falls on Tributary Streams*



*Ford Washington, Opposite Mt. Vernon
Originally designed by Major L. Buford*



Mount Vernon



At Vernon Memorial Bridge

George Washington Memorial Parkway

Figure 171 National Capital Park and Planning Commission brochure promoting George Washington Memorial Parkway, 1930 (courtesy of Washingtoniana Collection, D.C. Public Library)

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Figure 172 Aerial view showing construction of George Washington Memorial Parkway from Key Bridge to Spout Run, 1949 (Evening Star photograph file, Washingtoniana Collection, D.C. Public Library)



Figure 173 Grading for George Washington Memorial Parkway north of Key Bridge,
April 1949 (National Parkways, George Washington Memorial Parkway, RG
30-N, NARA)



Figure 174 Construction of Spout Run Parkway access to George Washington Memorial Parkway, 1949 (National Parkways, George Washington Memorial Parkway File #49-1154, RG 30-N, NARA)



Figure 175 Junction of Spout Run and George Washington Memorial Parkway, ca. 1956
(Commission of Fine Arts Seventeenth Report, 1 July 1954 to 30 June, 1958)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 332)

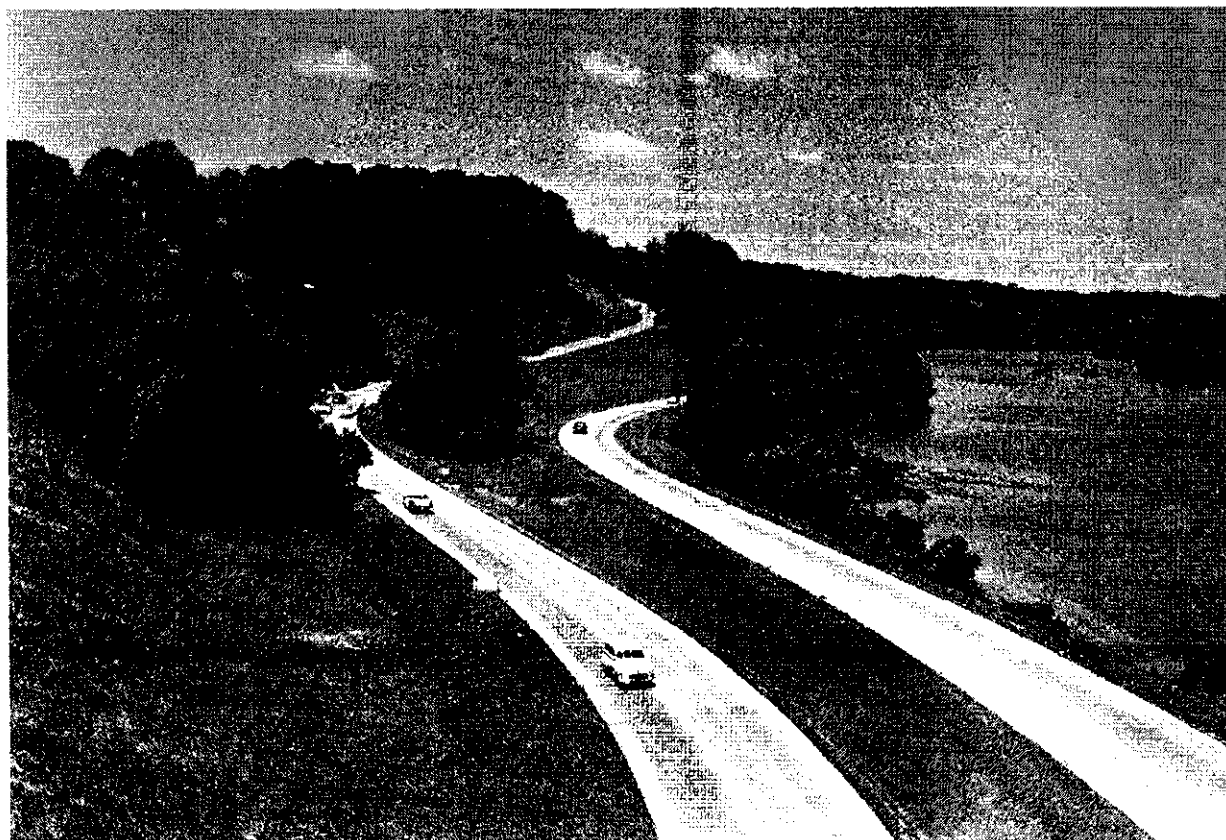


Figure 176 Classic view of George Washington Memorial Parkway, looking north from Key Bridge, 1953 (National Parkways, George Washington Memorial Parkway File #53-1059, RG 30-N, NARA)

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Figure 177 President Eisenhower and NPS Director Conrad Wirth at official opening of parkway between Spout Run and CIA, November 2, 1959 (Evening Star photograph file, Washingtoniana Collection, D.C. Public Library)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 334)



Figure 178 Detail of map of proposed development of regional park system, showing George Washington Memorial Parkway extending to Great Falls, 1950 (NCP&PC, Washington Present and Future: A General Summary of the Comprehensive Plan, 1950)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 335)

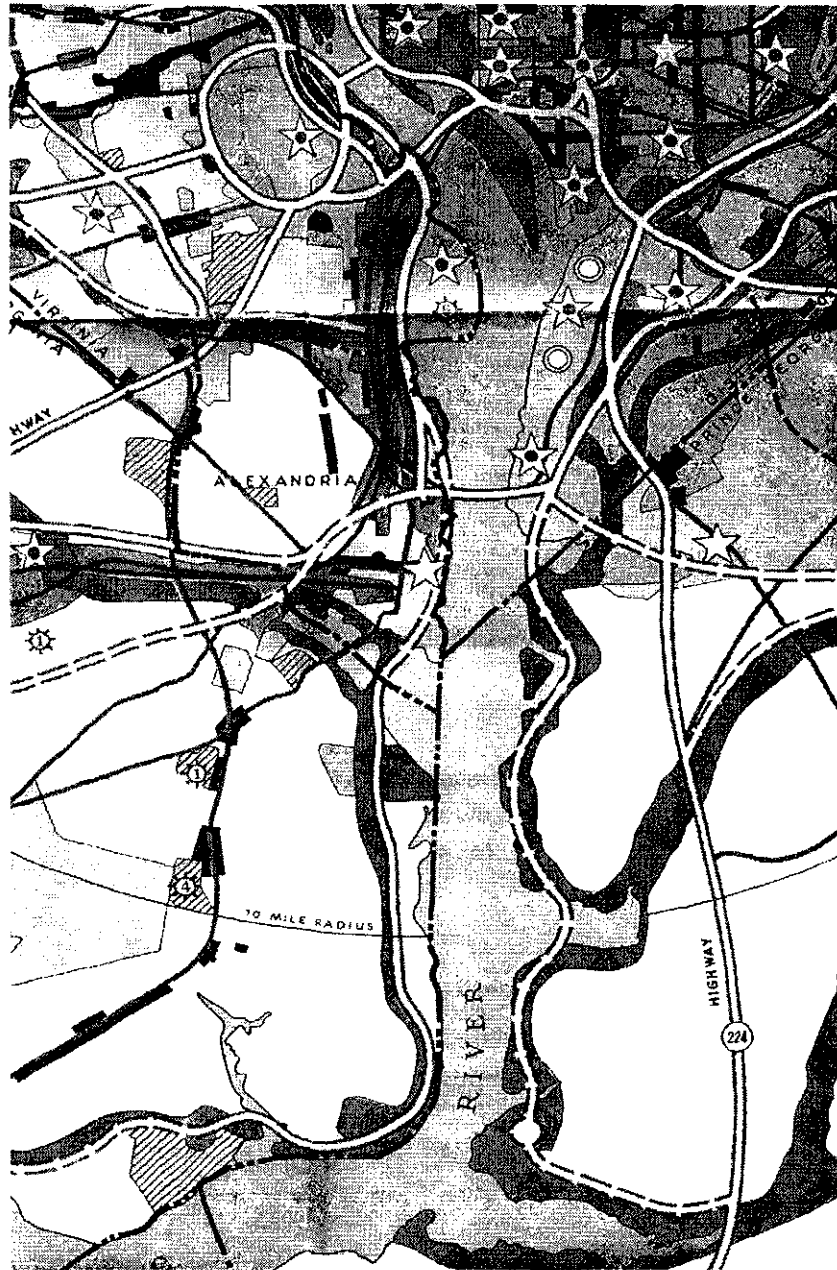


Figure 179 Detail of map of proposed development of regional park system, showing George Washington Memorial Parkway extending to Fort Washington (NCP&PC, Washington Present and Future: A General Summary of the Comprehensive Plan, 1950)

GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 336)

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Figure 180 Incomplete stretch of George Washington Memorial Parkway north of Chain Bridge, June 1967 (Evening Star photograph file, Washingtoniana Collection, D.C. Public Library)

Figure 181 Traffic on incomplete stretch of George Washington Memorial Parkway north of Chain Bridge, ca. 1967 (Evening Star photograph file, Washingtoniana Collection, D.C. Public Library)

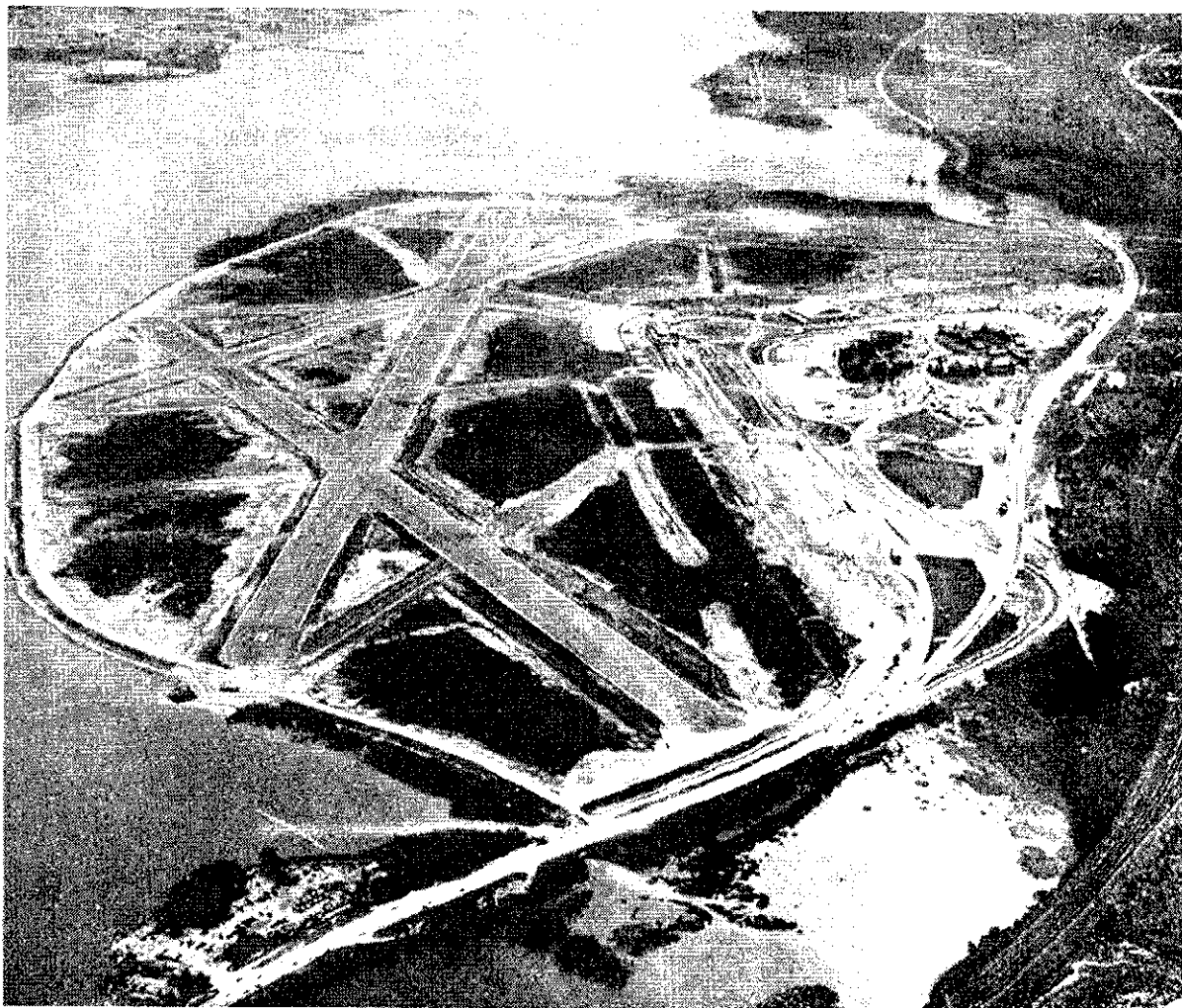


Figure 182 Relocation of Mount Vernon Memorial Highway for National Airport, ca. 1940 (Commission of Fine Arts Fourteenth Report, January 1, 1940, to June 30, 1944)

AUGUST 15, 1940

Relocated Highway Opens



The newly relocated section of Mt. Vernon Highway along Washington's new airport was officially opened to traffic yesterday. Here we see Rep. Howard Smith of Virginia giving the go signal to Dorothy Jakabowski and Stasia Danilowicz, visitors from Chester, Mass.

Figure 183 Re-opening of Mount Vernon Memorial Highway after relocation for National Airport, August 15, 1940 (unidentified clipping, Commission of Fine Arts Mount Vernon Memorial Highway Project File, RG 66, NARA)

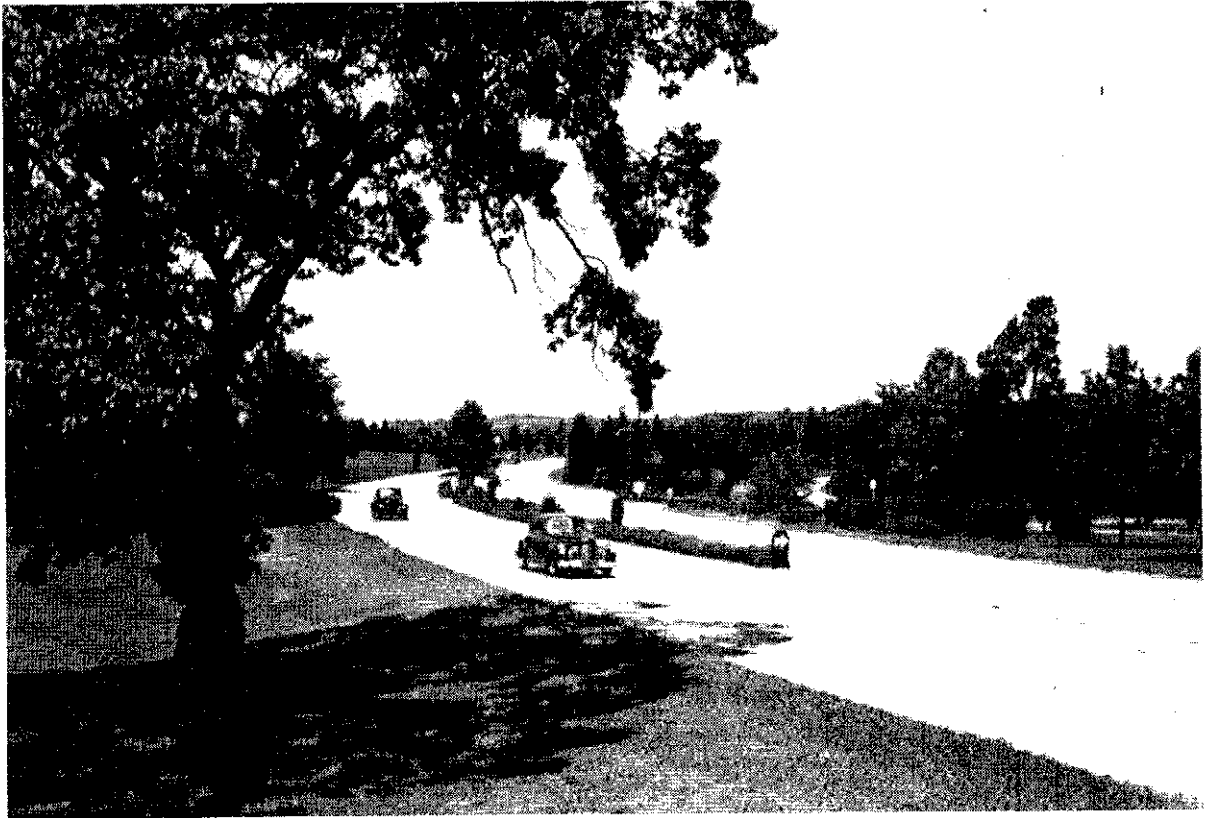


Figure 184 Mount Vernon Memorial Highway, 1946 view (Mount Vernon Memorial Highway File #46-2076, RG-30-N, NARA)

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GEORGE WASHINGTON MEMORIAL PARKWAY

HAER No. VA-69

(Page No. 341)

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HAER No. VA-69

(Page No. 342)

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Along the Potomac River from McLean
to Mount Vernon
Mount Vernon vicinity
Fairfax County
Virginia

HAER No. VA-69

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